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PRORATION OF NATURAL GAS IN KANSAS, LOUISIANA, OKLAHOMA AND TEXAS.

PRORATION OF NATURAL GAS IN KANSAS, LOUISIANA, OKLAHOMA AND TEXAS

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PRORATION OF NATURAL GAS IN KANSAS, LOUISIANA, OKLAHOMA AND TEXAS

Approved by:

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Proration of Natural Gas in Kansas, Louisiana, Oklahoma and Texas

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In 1963, the United States Supreme Court handed down its decision in the case of Northern Natural Gas Company v. State Corporation Commission, 372 U.S. 84. This decision impaired the ability of the states to protect the correlative rights of natural gas producers by invalidating an order entered by the Kansas Corporation Commission requiring an interstate pipe line purchaser to take ratably from all producers in a common source of supply. The state administrative order was held unconstitutional on the ground that state control over interstate purchasers had been preempted by the 1938 Natural Gas Act, 15 U.S.C. §§ 717-717w. Ratable take and common purchaser orders which had been the principal regulatory controls employed by the states to prevent discrimination in the production of natural gas were thus invalidated if directed to interstate purchasers.

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This paper seeks to evaluate the extent of the damage which the *Northern Natural Gas Company* decision inflicted upon the conservation machinery of the various producing states. The natural gas proration systems of four such states - Texas, Oklahoma, Louisiana and Kansas - are examined during the course of this evaluation. Each of the producing states in question continues to operate its natural gas proration system on the basis of statutory machinery which was largely rendered ineffective by the *Northern Natural Gas Company* decision.

Although the author concludes that state ratability orders directed solely to producers will continue to be upheld as a constitutional method of protecting correlative rights, he submits that such orders do not afford a practical tool to the states with which discrimination in gas production can be prevented in every situation. The problem of assuring ratable production does not appear to be pressing at the present time, but should it ever become a serious one, the states will be severely handicapped in their attempts to provide a legal solution.

I.

NATURE OF THE PROBLEM

Almost thirty years have been swept into the pages of American history books since 1938, when Congress enacted the Natural Gas Act[1] and thereby conferred regulatory authority over the sale and transportation of natural gas in interstate commerce to the Federal Power Commission. The nation's law-makers adopted this comprehensive statute, because of a firm belief that constitutional limitations upon the regulatory authority of the states necessitated federal control in order to regulate the interstate transportation and sale of gas. Pointing out the intention of the Natural Gas Act to apportion regulatory power between the state and federal governments, the statute specifically acknowledged state authority in the areas of production and gathering of natural gas.[2] Although the perimeter of state control has been constantly narrowed in the interval since 1938, the traditional authority of the states in the areas of conservation and protection of correlative rights remained more-or-less intact until the 1963 decision of the United States Supreme Court in Northern Natural Gas Company v. State Corporation Commission.[3]

In this case, the Kansas Supreme Court was reversed on its holding that an order of the Kansas Corporation Commission requiring an interstate pipe line purchaser to purchase ratably from all producers in a common source of supply was a valid exercise of that agency's authority. According to the United States Supreme Court, the order collided head-on with the preemption doctrine, pursuant to which state laws must be invalidated if federal supremacy is to be preserved. The Court held that the state order was an unconstitutional intrusion into the jurisdiction accorded to the Federal Power Commission over the sale and transportation of natural gas in interstate commerce by the Natural Gas Act.

An essential goal of state conservation statutes concerned with natural gas resources has been the protection of the correlative rights of producers by giving them an equal opportunity to produce their fair share of gas from that portion of the common reservoir underlying their tracts. As Professor Charles J. Meyers has observed, up until the Northern Natural Gas Company decision, the United States Supreme Court had recognized the traditional right of the states to protect correlative rights by the prevention of uncompensated drainage and such protection was usually in the form of ratable take orders directed at producers and purchasers alike.[4] Without ratable production by all producers who thereby take their proportionate share of the common

reservoir, the gas moves toward the low pressure areas around the over-produced wells and the result is injury to correlative rights by drainage. Proration is concerned with controlling the quantity of production and involves both the regulating of the level of production by means of allowables and the division of production among the well owners (ratability).[5]

A question that has concerned many legal writers since 1963, is whether the Northern Natural Gas Company decision stands for the proposition that the states lack the constitutional authority to protect correlative rights in the case of gas which is sold in interstate commerce, or, whether it merely means that the states must avoid protective measures which are directed at interstate purchasers? In the course of its opinion, the Court said:[6]

> These state orders necessarily deal with matters which directly affect the ability of the Federal Power Commission to regulate comprehensively and effectively the transportation and sale of natural gas, and to achieve the uniformity of regulation which was an objective of the Natural Gas Act. They therefore invalidly invade the federal agency's exclusive domain.

Because of the fact that almost any conservation order has a possible effect upon price whether it is aimed at producers or purchasers, this type of reasoning would deprive the states of their authority to control natural gas production by any means. It has been

pointed out that the language of the Court quoted above would provide the basis for a plausible argument that state conservation regulations should not be permitted to interfere with contractual provisions adopted in compliance with federal regulations.[7] On the other hand, Justice Brennan, in speaking for the majority in the Northern Natural Gas Company decision, observed that Kansas did not appear to lack "alternative means" of enforcing its ratable take orders.[8] This reference to the existence of "alternative means" being available to the state in its quest to assure ratable production would make plausible the legal argument that those orders which require ratable production by producers will continue to be sanctioned by the United States Supreme Court. The majority opinion also reaffirmed the validity of Champlin Refining Company v. Corporation Commission,[9] where the Court in 1932, had recognized the authority of the state to assure ratable taking by the issuance of orders directed at producers. This reaffirmation of the Champlin Refining Company decision seems to mean that state ratability orders aimed solely at producers will continue to be upheld even though they have an indirect, but similar impact upon the cost structures of interstate gas purchasers. Indeed, one writer on the subject has taken the position that it is the means employed by the state in establishing ratability that constitutes the

key point in determining whether the state has acted within its constitutional authority.[10]

It is the purpose of this paper to examine in an epitomized fashion the current proration methods relating to natural gas production utilized by the four producing states of Texas, Oklahoma, Louisiana, and Kansas. Hopefully, such exploration will uncover the statutory and administrative schemes employed by each of these jurisdictions in seeking to afford suitable protection for the correlative rights of natural gas producers. This is deemed to be a desirable undertaking in view of the restrictive consequences which stem from the <u>Northern Natural Gas Company</u> decision.

II

A WORD ABOUT CONSERVATION AND NATURAL GAS PRORATION

In today's complex and modern industrialized world the various sources of energy occupy an extremely important and strategic position. One such valuable energy source is to be found in the nation's exhaustible reserves of natural gas which happily have been protected and conserved by the several producing states for several decades. In recent times, the relative position of natural gas as compared with other fuels has changed quite dramatically. For example, thirty years ago only 5.8o/o of the world's total energy consumption was derived from natural gas, whereas twenty years later, in 1957, approximately 14.8o/o of all global energy production originated from natural gas.[11]

The history of oil and gas conservation in the United States dates from 1878, when the Commonwealth of Pennsylvania enacted the first statute relating to the casing and plugging requirements for wells.[12] Texas first became acquainted with natural gas seventy years ago when it was discovered in a well drilled in Washington County in 1897.[13] In 1909, the first common purchaser act was adopted in Oklahoma and in 1913, that jurisdiction became the first state to enact legislation conferring authority upon a regulatory agency to supervise the statutory oil and gas conservation policies.[14] Texas

followed suit in 1919, by conferring similar authority to its Railroad Commission.[15] Exorbitant waste often accompanied the earliest production and for many years, the national cousumption of natural gas barely equaled the volume that was vented wastefully.[16]

The oil and gas conservation "battle" was relatively quiet during the period between the termination of World War I and the beginning of the so-called Great Depression of 1929. In that year, Kansas unsuccessfully experimented with a system of voluntary proration of oil and gas as a means to regulate its excessive production,[17] and a plethora of conservation laws, regulations, rules and orders followed in the wake of the discovery of the prolific East Texas Field in 1930.[18] Concerning the historical development of oil and gas conservation laws, the then Governor of Kansas, Edward F. Arn, commented in 1953:[19]

> It was in the early 30's that economic waste was recognized when there was production in excess of the current demand and when that over-production played havoc with the industry. Our regulatory bodies attempted to curb that over-production; and they were criticized on all sides -- the consumers wailed that the price of petroleum products was too high, and the individual producers howled that the taxes to support the conservation program were too high."

In any event, for practical purposes at least, the efforts to conserve these vital natural resources have largely been made during the span of a single generation.

Practically all of the oil and gas producing states have long since followed suit in 1919, by conferring similar authority on its Railroad Commission.[14] Unrestrained waste often accompanied the earliest production, and for many years, the national consumption of natural gas barely equalled the volume that was wasted annually.[15]

The oil and gas conservation "battle" was relatively quiet during the period between the termination of World War I and the beginning of the so-called Great Depression of 1929. In that year, Kansas unsuccessfully experimented with a system of voluntary proration of oil and gas as a means to regulate its excessive production.[17] And a mushroom of conservation laws, regulations, rules and orders followed in the wake of the discovery of the prolific East Texas Field in 1930.[18] Concerning the historical development of oil and gas conservation there, the then Governor of Kansas, Edward F. Arn, commented in 1953:[19]

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[illegible] oil and gas conservation statutes.[20] These enacted legislation designed to accomplish the proration of production and California is currently the only major producing state which has declined to authorize a regulatory agency to perform such a task.[20]

The authority to restrict production is the basis of the various state systems of natural gas proration. It was over six decades ago that the question of whether the states constitutionally can enact conservation laws that interfere with private ownership rights in oil and gas was finally settled. The United States Supreme Court's affirmative answer in <u>Ohio Oil Company v. Indiana,</u>[21] upheld the authority of state governments to protect these important natural resources even though the private right to produce them was thereby affected.

One commentator on the subject summed up the nature of such conservation statutes this way:[22]

> To put it in a "nut shell", the primary objective of conservation legislation is to prevent physical and economic waste with a minimum infringement upon, or with an equitable adjustment of, individual property rights which are incidentally and necessarily impaired in the process.[15]

The theory which is implemented by a proration statute calls for production to be restricted in such a way that every individual owner may produce his ratable share of the oil and gas from the common source of supply. Constitutional support for state statutes which regulate the production and marketing of both oil and gas has been derived from at least three different legal arguments: (1) the protecenacted legislation designed to accomplish the prevention of [illegible] and California is currently the only major producing state which has neglected to enact a regulatory system to perform such a task.[10]

The authority to restrict production is the heart of the various state systems of natural gas regulation. It was over four decades ago that the question of whether the states constitutionally can enact conservation laws that interfere with private ownership rights in oil and gas was finally settled. The United States Supreme Court found a satisfactory answer in Ohio Oil Company v. Indiana[11] which upheld the authority of state governments to protect these common natural resources even though the private right to produce them was thereby affected.

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The theory which is implemented by conservation statutes calls for production to be restricted in such a way that every interest owner may produce his ratable share of the oil and gas from the common source of supply. Constitutional support for such statutes which regulate the production and marketing of both oil and gas has been derived from at least three different legal arguments: (1) the protection of correlative rights is a legitimate use of the police power of the state; (2) the important public interest in these natural resources must be guarded; and (3) regulation is essential to the prevention and abatement of surface nuisances which are attendant with production operations.[23]

Where the use of private property is restricted by a statute based upon the exercise of the police power of the state, the statute will be upheld so long as the restriction is a reasonable method that reaches a legitimate result, even though serious loss is caused to the owner of such property. In other words, in order to accomplish its objectives of waste prevention and protection of correlative rights, the legislative design must provide for a system of prorating production on an equitable basis.

Mr. Ferrill H. Rogers, former Conservation Attorney of the Oklahoma Corporation Commission, has described the issue of the legality of such laws as follows:[24]

> Conservation legislation is legally justifiable as an exercise of the state's police power to conserve its natural resources for the benefit of the state and its citizens. Thus the basic concept of conservation laws and the enforcement thereof is premised on the prevention of waste. "To prevent waste" includes the normal meaning of the word "waste" and also the statutory definitions thereof, which in Oklahoma includes (1) the dissipation of reservoir energy, (2) any practice which would result in damage to the reservoir or curtail its ultimate production, (3) the production of either oil or gas in excess of transportation or marketing facilities or the reasonable market demand, and (4) the drilling of unnecessary wells.

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Where the use of private property is restricted by a statute based upon the assumption of the police power of the state the statute will be upheld so long as the restriction is a reasonable method that achieves a legitimate result even though certain harm is caused to the owners of such property. In other words, in order to accomplish the objectives of waste prevention and protection of correlative rights, the legislation devised must provide for a system of practical regulation on an equitable basis.

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> Conservation legislation is legally justifiable as an exercise of the State's police power to conserve its natural resources for the benefit of the state and its citizens. Thus the basic concept of conservation laws and the enforcement thereof is predicated on the prevention of waste. "To prevent waste" includes the normal meaning of the word "waste" and also the statutory definitions thereof, which in Oklahoma includes (1) the dissipation of reservoir energy; (2) any practice which would result in damage to the reservoir or curtail the ultimate production; (3) the production of either oil or gas in excess of transportation or marketing facilities or the reasonable market demand, and (4) the drilling of unnecessary wells.

Proration, then, is a restriction on production which is imposed by the state in order that each producer can obtain his ratable share of the yield from the common source of supply. It is axiomatic, however, that a proration statute in and of itself will not guarantee every producer a market for his natural gas.[15] Indeed, unless all of the producers from a common pool are successful in marketing their allowable production, those who are unable to find purchasers will suffer injuries to their correlative rights in the forms of drainage and dissipation of the reservoir energy.[16]

In order to afford more adequate protection to the correlative rights of all natural gas producers with respect to their common source of supply, some states have adopted what are called common purchaser statutes while other jurisdictions have enacted so-called ratable-take laws. A common purchaser statute is one which imposes the obligation upon the purchasers of such production of purchasing ratably from every producer in a common reservoir. The typical common purchaser act will offer protection to correlative rights even in those situations where no technical waste is being committed. Although quite similar to common purchaser statutes, the ratable-take laws usually require purchasers of the common pool's production to purchase ratably from all producers, and this duty is imposed regardless of whether the taker is a common carrier or a common purchaser

-- which is an exaction of the former type of statute. Ratable taking is automatically made mandatory by some state statutes, whereas others simply empower the state regulatory agency to require such action. Texas, for example, imposes mandatory ratable taking upon purchasers only after it has been ordered in a particular situation by the Railroad Commission.[27] It should perhaps be noted at this point that common purchaser statutes do not serve to force the purchaser to buy more oil or gas than he actually needs to meet his market requirements.[28] These laws merely require ratable purchasing on the part of a taker in the event that he cannot acquire all of the production that is tendered to him from the field. Where this is the case, the statute operates to enjoin the common purchaser from discriminating as between the various producers.[29]

Pointing up the fact that the problems confronting natural gas producers are definitely not identical to those encountered by the producers of oil, one observer has said:[30]

> Four factors make the effective proration of oil production, either as between fields or as between wells and leases in the same field, easier than the proration of gas. In the first place, a purchaser of oil ordinarily has a posted price, that is, a price that will be paid any producer of oil of a specified grade in a specified area. Secondly, oil is commonly purchased under a contract known as a division order that may be terminated by either the purchaser or the seller on short notice. This makes the shifting of connections, that is, the sale of the oil to purchaser X instead of to purchaser

Y, relatively simple. In the third place, the oil pipe line systems serving the fields of Texas are so extensive in scope and so inter-connected as to make exchanges or "swap-outs" of oil or sales of oil after it leaves the field comparatively easy. Finally, oil may conveniently be stored, thereby giving a purchaser considerable flexibility in its purchases. The purchaser may be willing to take during one month more oil than it actually needs because the excess may be placed in storage.

Practices in the purchase of gas are entirely different. The major pipe lines that furnish most of the gas market post no prices. They do not purport to treat sellers of gas equally in so far as price is concerned, even as to gas of the same quality produced in the same field. Whatever equality of price prevails is ordinarily the result of bargaining between the seller and purchaser that results in a most favored nation clause or similar provisions being placed in the gas purchase contract. Moreover, gas pipe lines do not usually purchase gas under short term contracts. Instead, the nature of the business is such, especially with respect to financing, and hence with respect to regulation by the Federal Power Commission, that long term gas purchase contracts, contracts for twenty years or even much longer, are the rule. As a result, the shifting of connections, while quite common in the purchase and sale of oil, is practically non-existent in the purchase and sale of gas. Of equal significance is the fact that gas is not commonly stored. While the larger pipe line purchasers are making increased use of underground storage facilities, the amount of gas stored, compared to the amount purchased, is small. This means that a pipe line purchaser of gas is at the mercy of the end users of gas . . . The problem is further complicated because gas pipe line systems are not so extensive as oil pipe line systems and do not inter-connect to the extent that oil pipe lines do. Moreover, even though in a particular instance inter-connection may exist, flexibility may not be afforded because of the differentials in purchase price and other factors. Additional complexity results from the take-or-pay provisions or other minimum take requirements often found in gas purchase contracts and not ordinarily encountered in oil purchase contracts.

Several years ago the Legal Committee of the Interstate Oil

Compact Commission prepared a revised form of a suggested conservation statute dealing with oil and gas.[31] This recommended statute omitted all provisions relating to ratable-take obligations and similar duties of common purchasers. Some members of the committee believed that such provisions were more appropriately included in public utility type legislation, whereas others were convinced that ratable-take and common purchaser provisions are an essential ingredient of comprehensive conservation legislation.[32] One member of that committee who believed that conservation statutes which lack such provisions can be rendered meaningless has stated:[33]

> Essentially our problems, both from the point of view of prevention of waste and protection of correlative rights, are presently related to over-supply of crude oil and natural gas as related to the available market. It is small comfort to a producer of oil or gas that he is given the right to produce his fair share of a natural resource from a common source of supply if he is in fact unable to sell or market what he produces.

It remains to be seen whether state statutes which do contain these provisions have nevertheless been rendered meaningless.

III.

THE TEXAS METHOD OF NATURAL GAS PRORATION

Production and use of natural gas in Texas is governed by a statute[34] that is sanctioned by the state constitution.[35] At the time of its enactment, the Texas Legislature declared that this conservation law was deemed to be necessary in order to protect both public and private interests against waste in the production and use of natural gas and to guard against the lack of correlative opportunities among gas owners to produce their fair share from the common supply.

Section 10 of Article 6008 states:

> It shall be the duty of the Commission to prorate and regulate the daily gas well production from each common reservoir in the manner and method herein set forth. The Commission shall prorate and regulate such production for the protection of public and private interests:
>
> (a) In the prevention of waste as "waste" is defined herein;
>
> (b) In the adjustment of correlative rights and opportunities of each owner of gas in a common reservoir to produce and use or sell such gas as permitted in this Article.

The Texas statute assigns the duty of determining the status of

production from gas reservoirs throughout the state to the Railroad Commission.[36] The Commission is directed to prorate and regulate production from a reservoir whenever the Commission discovers the existence of waste or whenever it finds that waste is imminent in the production therefrom. Proration and regulation are also directed by the statute in those cases where the Commission determines that the capacity of the wells to produce natural gas from a reservoir exceeds the market demand for such gas. The statute also requires that the proration and regulation thus imposed by the Railroad Commission shall be reasonable.[37]

Although the statute authorizes the Railroad Commission to prorate and regulate the production of natural gas in order to protect correlative rights and to prevent waste, the Commission is seldom, if ever, called upon to prorate production for the latter purpose. This is explained by the fact that gas reservoirs are ordinarily immune from "rate sensitivity", that is, the rate of production has a negligible effect from an engineering view point, on the ultimate recovery from the reservoir in the usual case.[38] Ordinarily, the Commission's principal obligation in natural gas proration lies in the determination of the market demand for gas from a field and the granting of that demand as the field allowable in such a way that each well is permitted to produce its ratable share.

The Texas Railroad Commission has been called the most powerful state administrative agency in the United States.[39] The Commission has been vested with broad discretion in the administration of the statutes assigned to it for implementation. It has been expressly authorized to adopt any and all rules, regulations or orders which it finds to be necessary in order to carry out the provisions and purposes of such laws.[40] Although the Railroad Commission exercises most of its authority without resorting to court action, even when judicial review occurs the courts will ordinarily sustain the administrative decision if it is supported by substantial evidence. As two commentators put it:[41]

> Any forthright appraisal of the Commission's administrative processes must recognize that much of the essence lies in informal arrangements which do not even move into the Commission's own formal proceedings. Even of formal decisions, only a handful are reviewed.

Proration involves the restriction of production and the allocation of the production that is allowed among the various owners of the common source of supply. The word itself means a "division". The two most important elements of a natural gas proration system are: (1) a determination of the maximum allowable production from each reservoir; and (2) a formula for the ratable distribution of the allowed production to each owner in the reservoir. Each reservoir is prorated separately in the Lone Star State. The Texas system involves: (1) restriction of production; (2) allocation of the allowed production among

producers; (3) adjustment of allowables to equate allowable production to actual production; and (4) provision for the ratable purchase of gas in order to prevent discrimination of correlative rights.

Within ten days after the start of production, the absolute daily open flow potential of each gas well must be ascertained by means of a prescribed test. The results of this test must be forwarded to the Railroad Commission within fifteen days after the test has been completed.[42] The open flow rate is indicated in this test in terms of the maximum allowable that can be assigned under normal conditions to the well in those gas fields where special field rules have been adopted by the Commission.[43] In fields where no allocation formula has been adopted by the Railroad Commission, the production of natural gas from their wells is limited to twenty-five per cent (25°/o) of their potential capacity, except for casinghead gas.[44] In emergency situations, however, the Railroad Commission can especially authorize greater production.

Two classes of gas wells are recognized by the Railroad Commission:[45] (1) "prorated" wells; and (2) "non-prorated" wells. Prorated wells have their allowable production determined by a special field allocation formula prescribed by the Commission, whereas the allowables for the non-prorated wells are not ascertained by such formulas. There are three categories of non-prorated wells: (1) those

incapable of producing their calculated allowables; (2) those with special allowables in excess of those found by use of the field allocation formula; and (3) those with adjustable allowables created by reason of their inability to balance underproduction or overproduction during the second balancing period (the adjusted monthly allowables for such wells are limited to the maximum monthly production for any one month during the immediately preceding balancing period).

As pointed out previously, proration of natural gas production from a reservoir must be undertaken by the Railroad Commission whenever the full production of gas wells producing gas only in the field is greater than the reasonable market demand for it.[46] The prorated production allowed from such a reservoir is set by the statute as that volume of gas required by the reasonable market demand which can be produced without waste. When it has determined the reasonable market demand, the Railroad Commission is directed to allocate and distribute the allowed production among the various producers in the reservoir on a reasonable basis.

Two factors to be utilized by the Railroad Commission in determining allowable production have been specifically listed by the legislature: (1) the size of the tract with respect to surface position and common ownership; and (2) the relation between each well's daily

producing capacity and the total daily capacity of all wells in the common reservoir or zone.[47] The Commission is required to ignore the size of the tract in so far as it is in excess of the efficient drainage area of the well or wells that produce at twenty-five per cent (25%) of daily capacity.[48]

Initial determination of the monthly allowable for a newly prorated field is accomplished by the Railroad Commission with comparative ease. The forecasts of production filed by the various producers in the reservoir are simply added and the resulting figure is the monthly allowable. After the reservoir's production has been prorated for at least three months, the Commission begins to harmonize the producers' forecasts of future production with the actual demand for gas from the reservoir. This adjustment is made by comparing the current forecasted production with the actual production reflected in the current reports available (the latest monthly production figures from the reservoir are usually those of the third month preceding the current forecast).[49] The forecasts filed by the producers have been likened to "educated guesses".[50]

Initial purchasers of gas produced from the wells are required to file nominations of their requirements for gas during the month following the submission of the nominations. Operators using gas-well gas for their own operations must also file such nominations and

operators of processing plants are under the same obligation if they purchase natural gas at the well-head.[51] These purchaser nominations provide the Railroad Commission with information concerning the total purchase requirements for gas to be produced from the reservoir during the following month. In those reservoirs which have been provided with an allocation formula by the Commission, the well operators are required to submit producer forecasts by the ninth day of each month for the following month.[52] These forecasts reflect the volume of natural gas each operator expects to produce during the next succeeding month.

Determination of the market demand for natural gas production from a reservoir during the ensuing month is primarily based upon the producers' forecasts.[53] It is important to realize that the forecasts of production filed with the Railroad Commission by the operators can reflect any volume of gas up to the limit of the maximum production capacity of their wells.

Recognizing the fact that market demand for natural gas tends to embody general fluctuations, the Texas conservation statute authorizes the Railroad Commission to permit wells in a reservoir to produce greater volumes of gas than those specified in the monthly allowable, but only so long as no waste results from such overproduction.[54] There

are two limitations on this authorized over-production. First, no well is permitted to produce more than twice its monthly allowable in any one month unless the Railroad Commission recognizes the existence of an emergency situation wherein the increased demand for gas from the reservoir cannot otherwise be satisfied. However, even in a recognized emergency situation, the maximum overproduction permitted is set at four times the monthly allowable of the well or at twenty-five per cent (25%) of the daily producing capacity of the well. Secondly, no well can be permitted to produce more than twice its monthly allowable for more than two months in any six months period.

The practical result of the statutorily-ordained production in excess of the assigned monthly allowables is that a well's allowable is fixed on a six-months basis instead of on a monthly basis.[55] If the well is underproduced at the end of the first six months "balancing period", it can proceed to produce its underage during the second six months period. If the well cannot make up its accumulated underproduction during the second balancing period, it loses its underage permanently through cancellation.[56]

The statute directs that the Railroad Commission shall restrict production from all wells that are overproduced on March 1 and September 1, by assigning a fractional part of their monthly allowables in order to bring the accumulated overproduction and the accumulated

allowables into balance during the next six months period. If overproduction is not balanced during the ensuing six months, the well must be shut in until such time as a balance is achieved. The Commission is authorized to permit underproduction to be accumulated so that it can be made up during the second balancing period.

Proration of natural gas in Texas is linked with market demand requirements as determined by the Railroad Commission. It appears that the system operates in a very satisfactory manner so long as there is a copious amount of cooperation on the part of the operators. The Texas system's most vulnerable point is the usual practice of the Commission of adding the producers' nominations in order to arrive at current market demand. The ordinarily smooth-running conservation machinery is susceptible of being put out of "kilter" by adroit manipulations on the part of an operator who is ill-disposed to cooperation.

Most of the formulas established for prorated gas pools in Texas provide for the allocation of two-thirds of the pool allowable to individual wells in the proportion that the acreage assigned each well bears to the sum of the acreage in the reservoir, and one-third equally among the wells completed therein. To illustrate how the natural gas proration system operates in the Lone Star State, assume that this is the allocation formula adopted by the Railroad Commission for a newly allowables into balance during the next six months period. If overproduction is not balanced during the ensuing six months, the well must be shut in until such time as a balance is attained. The Commission is authorized to permit underproduction to be accumulated so that it can be made up during the second balancing period.

Proration of natural gas in Texas is linked with market demand requirements as determined by the Railroad Commission. It appears that the system operates in a very satisfactory manner so long as there is a modest amount of cooperation on the part of the operators. The Texas system's most vulnerable point is the usual practice of the Commission of asking the producers' nominations in order to arrive at current market demand. The ordinarily smooth-running conservation machinery is susceptible of being put out of "whack" by erratic nominations on the part of an operator who is ill-disposed to cooperation.

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W operates one well on 160 acres;

X operates one well on 80 acres;

Y operates one well on 320 acres; and

Z operates one well on 40 acres.

For the month of March, each of the four operators submit their nominations of estimated gas production to the Railroad Commission as follows:

W nominates 30 million cubic feet;

X nominates 15 million cubic feet;

Y nominates 30 million cubic feet; and

Z nominates 15 million cubic feet.

Each of the four wells in the field have a production capacity of one million cubic feet of gas per day. The four nominations total 90 million cubic feet of gas and the Commission therefore officially determines that volume of gas to be the market demand for the month of March. One-third of 90 million cubic feet is allocated to wells, so 30 million cubic feet is equally divided by four and each operator gains 7-1/2 million cubic feet thereby. Two-thirds of the total forecasted production is allocated according to acreage, so 60 million cubic feet is divided by the total of 600 acres and each acre receives 100,000

cubic feet of gas, as follows:

W's well gets 16 million cubic feet plus 7-1/2 million cubic feet for a total of 23-1/2 million cubic feet;

X's well gets 8 million cubic feet plus 7-1/2 million cubic feet for a total of 15-1/2 million cubic feet;

Y's well gets 32 million cubic feet plus 7-1/2 million cubic feet for a total of 39-1/2 million cubic feet; and

Z's well gets 4 million cubic feet of gas plus 7-1/2 million cubic feet for a total of 11-1/2 million cubic feet.

Assume that during March, the pipe line purchaser actually takes 30 million cubic feet of gas from W's well, 10 million cubic feet from X's well, 39-1/2 million cubic feet from Y's well, and 10 million cubic feet from Z's well. Comparing the allowables with actual production for the month of March results in the following:

W's well overproduced 6-1/2 million cubic feet;

X's well underproduced 5-1/2 million cubic feet;

Y's well balanced perfectly; and

Z's well was underproduced 1-1/2 million cubic feet.

The net underproduction for the pool during March was 500,000 cubic feet.

Assuming that the four operators submit the same nominations for June as they did in March, the Railroad Commission will proceed to adjust the market demand for the month of June as reflected in the cubic feet of gas as follows:

W's well gets 11 million cubic feet plus 7-1/2
million cubic feet for a total of 18-1/2
million cubic feet.

X's well gets 8 million cubic feet plus 7-1/2
million cubic feet for a total of 15-1/2
million cubic feet.

Y's well gets 12 million cubic feet plus 7-1/2
million cubic feet for a total of 19-1/2
million cubic feet.

Z's well gets 4 million cubic feet of gas plus
7-1/2 million cubic feet for a total of
11-1/2 million cubic feet.

Assume that during March, the four lease operators actually take 20 million cubic feet of gas from W's well, 10 million cubic feet from X's well, 19-1/2 million cubic feet from Y's well, and 10 million cubic feet from Z's well. Comparing the allowables with actual production for the month of March results in the following:

W's well overproduced 1-1/2 million cubic feet.

X's well underproduced 5-1/2 million cubic feet.

Y's well balanced perfectly; and

Z's well underproduced 1-1/2 million cubic feet.

The net underproduction for the pool during March was 5,500,000 cubic feet.

Assuming that the four operators submit the same nominations for June as they did in March, the Railroad Commission will proceed to adjust the market demand for the month of June as reflected in the producer forecasts by the amount of the net underproduction:

June nominations: 90 million cubic feet
Underage in March: -1/2 million cubic feet
Allowable in June: 89-1/2 million cubic feet.

W can accumulate overproduction on his well through two balancing periods, however if the Commission finds his well out of balance the following May, when the actual production in February is available to it, the well will be ordered shut in until it is balanced. X and Z can accumulate underproduction for two balancing periods, but it such underage is not made up by that time it is cancelled.

Whenever proration of production becomes necessary in order to protect the correlative rights of a lessee or royalty owner, the Railroad Commission must adopt such an order for a common reservoir if requested to do so by an interested party.[57] The Commission is required by statute[58] to establish proration orders which will give each producer in a reservoir an opportunity to produce his fair share of the natural gas, because such equal opportunity is bound up in the protection of correlative rights. In carrying out this statutory duty, difficulties have been encountered by the Commission, especially since 1961. The courts have not been reluctant to strike down allocation formulas which are found to discriminate between a producer's right to an equal chance to produce his fair share of the reservoir gas.

In Atlantic Refining Company v. Railroad Commission,[59] the court held that the Commission's formula sanctioned what amounted to confiscation by permitting a small tract owner to produce more than his fair share of the gas. The formula was based upon a one-third well and two-thirds acreage ratio. The field contained a number of natural gas wells that were located on 320-acre tracts, however there was one well which was situated on a tract of only three-tenths of an acre. The Atlantic Refining Company was able to demonstrate that the contested formula would discriminate severely against the large tract wells in that the small tract would ultimately be permitted to recover $2,500,000. from its gas production, even though there was only $7,000. worth of natural gas in place beneath its surface. In the face of this disparity, the Texas Supreme Court held that the formula adopted by the Commission was not supported by substantial evidence and was therefore invalid. Subsequent to this decision, the Railroad Commission promulgated a new allocation formula for the field which prorated production therefrom on an acreage basis alone. Under the new order, the small tract operators were to be held to the production calculated by the formula unless they unsuccessfully attempted to pool with other producers. In the event that their attempted pooling efforts failed, the small tract operators were to become eligible for a special allowable which was designed to prevent confiscation by permitting

their operators to return a profit.[60]

The argument that a generous formula is necessary in order to allow small tract operators an opportunity to produce enough gas to provide them with a reasonable profit and thereby prevent confiscation of private property was made by the Railroad Commission in <u>Halbouty v. Railroad Commission</u>.[61] The argument was that since the owner of a tract is entitled to one well to prevent the confiscation of the gas lying beneath his property, he is thereby entitled to drain gas from the adjoining properties in an amount sufficient to return a profit. The contested one-third two-thirds formula would have permitted each small tract operator to drain 92.87 percent of his ultimate gas recovery from adjoining tracts. The formula was struck down by the court, because it did not give all of the operators in the common reservoir an equal opportunity to produce their fair share and was therefore not supported by substantial evidence.

The present law relating to the Railroad Commission's allocation formulas has been described as follows:[62]

> When a statute or regulation thereunder has the effect of permitting one owner to produce more than his fair share thereby giving the opportunity of draining the excess from the land of others who are denied the opportunity to produce their fare share, confiscation of property results, and the statute or regulation is invalid, unless the drainage takes place as an unavoidable result of reasonable regulation to prevent waste.

In order to successfully attack an allocation formula adopted by

the Railroad Commission, the complainants must take a timely appeal from such order. In Railroad Commission v. Aluminum Company of America,[63] the Texas Supreme Court reversed the lower court's finding that the one-third two-thirds formula was not sustained by substantial evidence, on the ground that the large tract owners had acquiesced in such formula for some four years and therefore their appeal was not timely made. The failure to appeal from the imposition of an allocation formula for one reservoir, however, will not bar an appeal concerning a formula authorized for a separate pool subsequently discovered at a lower depth.[64]

Both the Halbouty and Atlantic Refining Company decisions clearly demonstrate the invalidity of the one-third well two-thirds acreage formulas. Such allowable formulas remain in effect throughout Texas fields only because the would-be complainants are barred by unreasonable delay, laches and estoppel from seeking to have the Railroad Commission's order adjudged null and void. Those who would challenge an allowable formula in Texas must make certain that their appeals are timely made. Since there is no statutory appeal time, such appeals should be taken within a maximum six months period and even sooner in order to forestall the unfavorable situation where developments have been initiated in reliance upon an order which has gone un-challenged for more than a thirty-day period.[65] Although the Railroad

One method of manipulating allowables and production is quite complicated, but results in a considerable postponement of the normal consequences of accumulated overproduction. Assume that X is an operator with six wells, each of which has a production capacity of two million cubic feet. In this illustration X consistently nominates one million cubic feet of gas for each of his six wells and it is assumed that the monthly allowables are fixed at this volume by the Railroad Commission. For every six-month balancing period each of X's wells receives an allowable of six million cubi cfeet. Overproduction may normally be accumulated for two balancing periods, but by careful manipulation of each well's production, X can prevent the timely shutting-in of his overproduced wells.

A five-year record of production from X's six wells and the status of each well at the end of each balancing period is shown below:

Well No.	6 Mos.	12 Mos.	18 Mos.	24 Mos.	30 Mos.	36 Mos.	42 Mos.	48 Mos.	54 Mos.	60 Mos.
1	7	5	8	4	10	2	11	1	12	0
2	6	7	5	9	3	10	2	12	0	12
3	7	5	9	3	9	3	10	2	12	0
4	6	8	4	9	3	10	2	11	1	12
5	6	7	5	8	4	10	2	11	1	12
6	6	6	7	5	9	3	11	1	12	0

Commission could change such allowable formulas on its own initiative, it has been reluctant to take such action and so the confiscatory formulas continue to exist, because of their immunity from judicial review.

In discussing the problems inherent in determining an equitable formula, Professor Eugene Kuntz, has said:[66]

> In order to be fair and in order to protect correlative rights completely, the share allocated to each owner should represent the portion of the common source of supply which he could have produced if no regulation whatever had been imposed on drilling and production. The proper point of reference for making such a determination should be the law of capture, as refined by recognized correlative rights. Under this concept, each owner should be entitled to that portion of the common source of supply which he could have produced by prudent operations if operations had not been curtailed. If the criterion described above is accepted, in authorizing wells or in allocating production, all factors are relevant which relate to the excellence of the particular tracts overlying the common source of supply. Accordingly, acre feet of saturated sand would be only one factor to take into account along with porosity and permeability of the sand, location on the structure, and possibly the quality of the structure for drilling purposes.

In addition to its problems with allocation formulas, the Railroad Commission has experienced difficulties with its efforts to ensure an equitable distribution of production. By following its usual practice of merely adding up the producer forecasts to determine the monthly market demand for natural gas from a reservoir, the Commission has encountered situations where exaggerated nominations have been used by operators to impinge upon the correlative rights of other producers in the common pool.

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3	7	5	9	3	9	3	10	2	12	0
4	6	8	4	9	3	10	2	11	1	12
5	6	7	5	8	4	10	2	11	1	12
6	6	6	7	5	9	3	11	1	12	0

At the end of the first balancing period, X has overproduced wells 1 and 3 by one million cubic feet. During the second balancing period, X brings these wells into balance , but overproduces well 4 by two million cubic feet and wells 2 and 5 by one million cubic feet each. Six months later, at the conclusion of the third balancing period, X has balanced wells 2, 4, and 5, but has overproduced well 1 by two million cubic feet, well 3 by three million cubic feet, and well 6 by one million cubic feet. At the close of the fourth balancing period, wells 1, 3, and 6 are balanced, however wells 2 and 4 are overproduced by three million cubic feet. At the end of the fifth balancing period, X balances wells 2, 4, and 5, however an overage of three million cubic feet each is reported for wells 3 and 6, while well 1 is overproduced by four million cubic feet. At the close of the third year, X balances wells 1, 3, and 6, but has overages of four million cubic feet each for wells 2, 4, and 5. These wells are then brought into balance by the end of the seventh balancing period, but wells 1 and 6 have overages of five million cubic feet each and well 3 had overproduced four million cubic feet of gas. At the close of the fourth year, X has balanced wells 1, 3, and 6, but has overproduced wells 4 and 5 by five million cubic feet each and well 2 has an overage of six million cubic feet. When the ninth balancing period ends, X has balanced wells 2, 4, and 5, but has overproduced wells 1, 3, and 6 by six million cubic

feet each. During the fifth year the system is beginning to catch up with X and at the close of the tenth balancing period X has balanced wells 1, 3, and 6, but has overproduced his three remaining wells by six million cubic feet each.

During the five-year period, X has managed to produced 388 million cubic feet of gas whereas the normal operation of the proration system and the balancing rule would have allowed him to produce only 360 million cubic feet during that period. X's manipulations have left him with twenty-eight million cubic feet of gas to the good and note that he did not have to shut-in any of his wells until the beginning of the fifth year. This variety of manipulation is illustrated in <u>Railroad Commission v. Permian Basin Pipeline Company.</u>[67]

In this case the Railroad Commission determined that one operator was submitting fictitious forecasts in order to boost the total allowable production so that he could avoid the normal effect of the balancing rule by manipulation of his several wells. As a result of such manipulation, the operator was enabled to prevent the other operator in the reservoir from being able to produce his fair share of production as calculated by the allocation formula then in effect. The Commission thereupon adopted a special order which suspended the operation of the balancing rule and required the pipeline purchaser to purchase its requirements ratably from both producers. In lieu of the suspended balancing rule, the new order specified that any well

with an overproduced status greater than its average monthly allowable was to be shut in until the overproduction assessed against it was less than one hundred per cent of its allowable. The pipeline purchaser was also required to file monthly nominations and the underproduction accumulated by the victimized well belonging to Atlantic Refining Company was not arbitrarily cancelled. This remedial order of the Commission was sustained by the Texas Court of Civil Appeals.

Another example of the problems created by the Railroad Commission's uncritical acceptance of exaggerated producer forecasts is found in Railroad Commission v. Woods Exploration and Producing Company.[68] In this case the Commission discovered that small tract owners were filing forecasts of monthly production at or near the maximum delivery capacity of their wells and were thereby causing large allowables to be assigned to the field, because of the resulting estimate of market demand based upon such forecasts. These reservoir allowables were so great that the large tract wells were prevented from producing their fair share of the gas, because their allowables were in excess of maximum delivery capacity. This caused the large tract wells to be classified as "limited capacity" wells and, as such, they were assigned allowables up to the limit of their delivery capacity. The remainder of the field allowables assigned to the field's large tract wells under the proration formula were then re-allocated among the small with an unnecessarily greater than the average monthly allowable was to be shut in until the overproduction charged against it was less than one hundred per cent of its allowable. The [illegible] also [illegible] to the monthly [illegible] and the underproduction [illegible] cumulated by the [illegible] well [illegible] Building Company was not [illegible] cancelled. This [illegible] of the Commission was sustained by the Texas Court of Civil Appeals.

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But even when the allocation formula theoretically produces the desired equal opportunity for the operators to share in the common reservoir production, the problem of protecting correlative rights can exist where one or more of the operators is unable to market his prorated share. In this type of situation, the Railroad Commission has another method of affording such protection which is embodied in the Texas common purchaser act.[69] This statute provides that a defined common purchaser of natural gas must purchase natural gas offered for sale without discrimination in favor of one producer or against another in the same field. The statute permits an interested party to obtain an order from the Railroad Commission directing the common purchaser to purchase its requirements from the reservoir in a ratable fashion, that is, to take from each producer in the field in proportion to his allowed production.

Concerning the value of this statutory authorization to require ratable purchase, the Texas Supreme Court has declared:[70]

> Ratable production and ratable take or purchase are essential in preventing drainage between leases, and are related to the prevention of above-ground waste, because if a producer cannot share in the domestic full market, the operator will try to find some other market, one which might be inferior use of gas such as the manufacture of carbon black. Common purchaser statutes are more vital to gas producers than to producers of oil since gas cannot be readily stored as can oil, and is not transportable by truck.

The Railroad Commission has issued several ratable-take orders to natural gas purchaser pursuant to the common purchaser statute, the most recent litigated order being the one contested in Railroad Commission v. Rio Grande Valley Gas Company.[71] In this case, the pipe line purchaser was ordered to extend its gathering line to the petitioner's well and to purchase gas from it without unjust or unreasonable discrimination. The Texas Supreme Court held that the pipe line company and the petitioner were producing in the same field as required by the statute, even though their respective wells were producing from different vertically separated reservoirs and that the protection of the common purchaser act was therefore available to the petitioner. The authority of the Railroad Commission to order the pipe line company to extend its facilities to connect with the petitioner's well derives from Article 6049(a), §11(d) which reads as follows:

> Section 11(d): The Railroad Commission shall make inquiry in each field concerning the connections of the various producers and when discrimination is found to be practiced by any common purchaser as defined in this Act, the said Railroad Commission shall issue an order to such common purchaser to make such reasonable extensions of their lines and such reasonable connections as will prevent such discrimination.

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> Section 11(c). The Railroad Commission shall make inquiry in each field concerning the connections of the various producers and where discrimination is found to be practiced by any common purchaser as defined in this Act, the said Railroad Commission shall issue an order to such common purchaser to make such reasonable extensions of their lines and such reasonable connections as will prevent such discrimination.

The Texas common purchaser act relating to natural gas does not contain a reference to "common carrier" in its definition of a common purchaser and this omission has had some impact upon the effectiveness of the statute. In Texoma Natural Gas Company v. Railroad Commission,[72] a gas pipe line carrier which was neither a public utility nor a common carrier was held not to be subject to the common purchaser law. This holding, in effect, was that the act could not be used to convert the status of a private pipe line company into that of a common carrier. This problem was not present in the Rio Grande case where the pipe line company was a public utility.

Although no mention was made in the Rio Grande case of the decision of Northern Natural Gas Company v. State Corporation Commission,[73] the fact that the Railroad Commission's order was directed to a wholly intrastate pipe line company would exempt it from the latter case. In the Northern Natural Gas Company case, the Kansas Corporation Commission's ratable-take order was directed to an interstate pipe line purchaser and it was invalidated because of its possible interference with the federal regulatory scheme. As a result of this decision, however, future ratable-take orders will be immune from reversal only if they are directed to non-interstate purchasers of natural gas. Actually, there are probably very few situations where only intrastate purchasers are involved and equity demands that ratable-take orders be directed to all purchasers in the field. As one commentator has observed:[74] "The burden of purchasing without discrimination should not be borne by, nor can it intelligently be cast upon, the

intrastate purchasers only." It would appear therefore, that the proration weapon of ratable-take orders aimed at purchasers, whether interstate or intrastate, has, practically speaking, been effectively "spiked" except for those isolated situations where only intrastate purchasers are involved.

The problem arising out of the practice utilized in the past by some producers whereby fictitious nominations of gas requirements were filed with the Railroad Commission might be obviated by the enforcement of the state anti-trust laws. In Woods Exploration and Production Company v. Aluminum Company of America,[75] the plaintiff sued other operators in a gas field for damages based upon an alleged conspiracy to violate the Texas anti-trust statutes by filing false producer nominations which resulted in a restriction of the plaintiff's production. The lower court dismissed the suit on the ground that the Railroad Commission was vested with original jurisdiction in the matter. The Texas Court of Civil Appeals reversed and remanded, holding that the Railroad Commission does not have jurisdiction over claims involving alleged violations of anti-trust laws.

Although not directly concerned with the immediate subject of natural gas proration, the recent case of J.M. Huber Corporation v. Denman,[76] deserves a brief mention, because of its potential impact upon the jurisdiction of the Federal Power Commission in the area of

establishing the price for resale of gas in interstate commerce. The safeguarding of that jurisdiction figured heavily in the decision of the United States Supreme Court in the Northern Natural Gas Company case as was pointed out earlier. The Huber case involved a controversy between a lessor and a lessee over the royalty clause of an oil and gas lease. The specific question litigated was whether, under the terms of the lease, the amount payable as royalty to the lessor was to be ascertained as a specified percentage of the price received by the lessee from his purchaser, or whether it was to be figured on the basis of the market price for like gas produced in the field. The district court found that the term "market price" as used in the lease was employed in its traditional legal sense and was therefore not the equivalent of the price paid to the lessee for his production. The circuit court of appeals found ample evidence to support the lower court's findings, but remanded the case and directed that further action be suspended until such time as the Federal Power Commission determined whether the question was one within its primary jurisdiction and, if so, whether it was a matter which should be referred to the federal agency for an initial decision. The outcome of this case will perhaps have a profound impact upon the already clouded area of federal-state jurisdiction over natural gas production in the United States.

establishing the price for resale of gas in interstate commerce. The ambiguity of this jurisdiction appears already in the decision of the United States Supreme Court in the [illegible] case as was pointed out earlier. The [illegible] case involved a controversy between a farmer and a lessee over the royalty clause of an oil and gas lease. The specific question involved was whether, under the terms of the lease, the income payable as royalty to the farmer was to be ascertained on a [illegible] of the value received by the lessee from his purchaser, or whether it was to be figured on the basis of the market price for like gas produced in the field. The district court found that the term "market value" as used in the lease was employed in its traditional legal sense and was therefore not the equivalent of the price paid to the lessee for his production. The circuit court of appeals found ample evidence to support the lower court's findings, but remanded the case and directed that further action be suspended until such time as the Federal Power Commission determines whether the transaction was one within its primary jurisdiction and, if so, whether it was a matter which should be referred to the federal agency for an initial decision. The outcome of this case will certainly have a profound impact upon the already clouded area of federal-state jurisdiction over natural gas production in the United States.

Why cancel underproduction in order to achieve balancing?

The rationale supporting the periodic cancellation of accumulated underages has been stated as follows:[77]

> Unless provision is made for cancellation and redistribution of underproduction, the impact of a constantly increasing underproduction in the gas pool will result in the following: Lowering the allowables for the wells in the pool and reducing the total output of the pool below its market demand. This would deprive operators in the pool of their opportunity to produce their fair share of the full market demand.

The effect of the balancing rule on accumulated underproduction is shown in the following chart which also demonstrates the inevitable consequences of a rule which would allow such underage accumulations to escape cancellation at the conclusion of the second balancing period.

Month	Total Nominations	Total Allowables (balanced)	Total Allowables (not cancelled)	Under-Production (accumulated)
1	24	24	24	1
2	24	23	23	2
3	24	22	22	3
4	24	21	21	4
5	24	20	20	5
6	24	19	19	6
7	24	18	18	7
8	24	17	17	8
9	24	16	16	9
10	24	15	15	10
11	24	14	14	11
12	24	13	13	12
13	24	24	12	13
14	24	23	11	14
15	24	22	10	15
16	24	21	9	16
17	24	20	8	17
18	24	19	7	18
19	24	18	6	19
20	24	17	5	20
21	24	16	4	21
22	24	15	3	22
23	24	14	2	23
24	24	13	1	24

The example shown by the chart assumes that the monthly nominations by all operators remain constant at twenty-four million cubic feet. It can be seen that by the end of the second balancing period when the accumulated underage is cancelled, the total field allowables have been reduced almost in half. If the underproduction were not cancelled, but were to be allowed to be carried forward indefinitely as a charge against the monthly allowables, there would be no field allowable left at the close of the second year! Thus, it can be seen that although the nominations do figure into the initial determination, it is the total actual production from the reservoir which in the long run governs the allowables. In this theoretical example, those operators in the field who were not under-producing would probably consider the possibility of continually increasing their nominations in order to offset the effect of the cumulative underages. They could also contemplate the desirability of resorting to overproduction of their wells as a remedial device, however the probability that this would lead to the eventual shutting-in of some wells would undoubtedly detract from its attractiveness. Their situation would become untenable if the rules permitted the underages to accumulate indefinitely.

The possibility of successfully increasing field allowables by the unilateral use of increased nominations was recently examined in the case of Weymouth v. Colorado Interstate Gas Company.[78] Involved

The example shown by the chart assumes that the monthly nominations by all operators remain constant at twenty-four million cubic feet. It can be seen that by the end of the second balancing period when the accumulated underage is cancelled, the total field allowables have been reduced almost by half. If the under-production were not cancelled, but were to be allowed to be carried forward indefinitely as a charge against the monthly allowables, there would be no field allowable left at the close of the second year. Thus, it can be seen that although the nominations do figure into the initial determination, it is the total actual production from the reservoir which in the long run governs the allowables. In this theoretical example, those operators in the field who were not under-producing would probably consider the possibility of continually increasing their nominations in order to offset the effect of the cancelled underages. They could also contemplate the desirability of resorting to over-production of their wells as a remedial device, however the probability that this would lead to the eventual shutting-in of such wells would undoubtedly detract from its attractiveness. This situation would become untenable if the rules permitted the underages to accumulate indefinitely.

The possibility of successfully increasing field allowables by the unilateral use of increased nominations was recently considered in the case of [illegible] v. Colorado Interstate Gas Company.[78] Involved was the huge West Panhandle field in Texas, which has 151 purchasers and twenty-six purchasers. The lessors, who owned the 100,000-acre Masterson ranch near Amarillo, sued to recover from the lessee pipe line for alleged underproduction of the lease and failure to pay royalty payments equivalent to market value. Admitting that it had an implied obligation to reasonably develop, produce, operate, and market production, the lessee never-the-less argued that it had produced or paid for all of the natural gas as was permitted by the allowables fixed by the Railroad Commission. The theory pressed by the lessors to support their charge of underproduction was that the lessee could have increased its authorized allowable production by filing increased nominations since the proration order in effect for the West Panhandle field provided for production forecasts to be submitted by purchasers. The jury found that the lessee had failed to exercise due diligence in producing and marketing gas, but found that the royalties paid were the equivalent of market value. A jury verdict at a second trial, however, established a difference between the royalty payments and market value and the lessor's judgment was therefore stepped up to $243,674.88 plus interest.

Concerning the complaint that underproduction had occurred, the lessors admitted that both increased nominations and effective increased allowables would have been necessary in order to permit the was the large West Panhandle field in Texas, which had 211 [illegible] and twenty-six purchasers. The lessors, who owned the 100,000-acre Masterson ranch near Amarillo, sued to recover from the lessee pipe line for alleged under-production of the lease and failure to pay royalty payments equivalent to market value. Admitting that it had an implied obligation to reasonably develop, produce, operate, and market production, the lessee never-the-less argued that it had produced or paid for all of the natural gas it was permitted by the allowables fixed by the Railroad Commission. The theory pressed by the lessors to support their charge of under-production was that the lessee could have increased its authorized allowable production by filing increased nominations since the proration order in effect for the West Panhandle field provided for production forecasts to be submitted by purchasers. The jury found that the lessee had failed to exercise due diligence in producing and marketing gas, but found that the royalties paid were the equivalent of market value. A jury verdict at a second trial, however, established a difference between the royalty payments and market value and the lessor's judgment was therefore stepped up to $[illegible] plus interest.

Concerning the complaint that under-production had occurred, the lessors admitted that both increased nominations and effective increased allowables would have been necessary in order to permit the additional gas production sanctioned by the jury verdict. Since the lessee held but a twenty percent interest in the field, it was agreed that the nominations would have had to total over forty-two billion cubic feet in order for the lessee to have secured an additional annual production of 3.1 billion cubic feet of gas from the leasehold. The appellate court was unable to discover any proof in the record showing that had the increased nominations been made an increase in allowables would have resulted which in turn would have caused additional gas production. The case was remanded to the district court to enable the lessors to produce such evidence. The court held that the evidence sustained the verdict as to market value, but was insufficient to support the finding that the lessee had breached its implied covenant to market production. Inasmuch as the lessee had argued that the Federal Power Commission had primary jurisdiction over the claim for a higher price for royalties, the court directed that the question should be submitted to that federal agency for initial decision.

In its opinion, the court pointed out that it appeared to be mathematically impossible for the purchaser of only one-fifth of the field's production to ensure that actual production would correspond to the volume desired to be achieved by merely filing increased nominations with the Railroad Commission. Such increased nominations would be allocated to all of the wells in the reservoir in the form additional gas production requested by the jury verdict. Since the lessee held but a twenty per cent interest in the field, it was agreed that the requirements would have had to total over forty-two billion cubic feet in order for the lessee to have secured an additional annual production of 2.1 billion cubic feet of gas from the leasehold. The appellate court was unable to discover any proof in the record showing that had the increased nominations been made an increase in allowables would have resulted which in turn would have caused additional gas production. The case was remanded to the district court to enable the lessors to produce such evidence. The court held that the evidence sustained the verdict as to market value, but was insufficient to support the finding that the lessee had breached its implied covenant to market prudently. Inasmuch as the lessee had argued that the Federal Power Commission had primary jurisdiction over the claim for a higher price for royalties, the court directed that the question should be submitted to that body for initial decision.

In its opinion, the court pointed out that it appeared to be mathematically impossible for the purchasers of only one-fifth of the field's production to assure that actual production would correspond to the volume expected to be achieved by merely filing increased nominations with the Railroad Commission. Such increased nominations would be allocated to all of the wells in the reservoir in the field of individual allowables. The opinion states:[79]

> This means that unless the other eighty percent takers produced their share of the increased allowables resulting from Lessee-Pipeline's increased nomination, Lessee-Pipeline would have to increase its nomination in the succeeding month in an amount sufficient to overcome the adjustment for field underproduction. This process, once begun, pyramids at an accelerating pace because the anticipated adjustment creates a larger difference between such nominations and the static production by the rest of the field, which in turn means a larger adjustment will have to be offset by an even larger nomination. The result is the spiral ascendancy of nominations. Under a statute and rules requiring good faith nomination under oath it would be a distortion of the Texas regulatory scheme to require a Lessee-Pipeline to make such astronomical, fictional nominations.

It would thus appear that unilateral action on the part of a producer or purchaser to accomplish increased allowables by the filing of increased nominations will not succeed in a large multi-purchaser field.

Mention should be made of the so-called "Henze type" proration order which was utilized on occasion by the Railroad Commission until 1961. This order derived its name from the order issued by the Commission on September 1, 1955, for the Henze field located in DeWitt County. The order was adopted subsequent to hearings conducted by the Commission which demonstrated that some of the producers were filing excessive nominations in order to acquire increased allowables. These fictitious nominations resulted in in-of individual allowables. The opinion states:[77]

> This means that unless the other eighty process takers produced their share of the increased allowables resulting from Lessee-Pipeline's increased nominations, Lessee-Pipeline would have to increase its nomination in the succeeding month in an amount sufficient to overcome the adjustment for that underproduction. This process, once begun, proceeds at an accelerating pace because the anticipated adjustment creates a larger difference between such nominations and the actual production by the rest of the field, which in turn means a larger adjustment will have to be added to even larger nominations. The result is the actual escalation of nominations. Under a statute and rules requiring good faith nominations under oath, it would be a distortion of the Texas regulatory scheme to require a Lessee-Pipeline to make such extraordinary, fictional nominations.

It would thus appear that unilateral action on the part of a producer or purchaser to accomplish increased allowables by the filing of increased nominations will not succeed in a large multi-purchaser field.

Mention should be made of the so-called "Haynie type" proration order which was utilized on occasion by the Railroad Commission until 1961. This order derives its name from the order issued by the Commission on September 1, 1955, for the Haynie Field located in [illegible] County. The order was adopted subsequent to hearings conducted by the Commission which demonstrated that some of the producers were filing excessive nominations in order to acquire increased allowables. These fictitious nominations resulted in increased allowables which were not being purchased by the pipe line. As a consequence, large underages accumulated and eventually the normal proration system was put out of order so that ratable take was no longer being achieved. The Commission issued a schedule showing the participation factor of each well in the field. A well's participation factor was comprised of its equitable share of reservoir production under the allocation formula.

To illustrate its operation, assume that there are three producers in a field and participation factors are assigned to their wells as follows:

A's well has a participation factor of twenty percent;

B's well has a participation factor of fifty percent; and

C's well has a participation factor of thirty percent.

Assume that the purchaser takes a total of 100 million cubic feet of gas from the field during March, as follows:

A's well produces ten million cubic feet;

B's well produces fifty million cubic feet; and

C's well produces forty million cubic feet.

Since its participation factor entitled it to produce twenty million cubic feet of the March allowable of gas from the field, A's well is underproduced by ten million cubic feet. B's well is in perfect balance, but C's well has overproduced ten million cubic feet.

The "Henze type" order required that a well which accumulated an overage equivalent to its allowables for the two preceding months be shut-in until its overproduction was reduced to a volume not exceeding its current monthly allowable.

The pipe line was permitted to take whatever volume of gas it required in order to satisfy its demand, but the Railroad Commission required that such total demand be taken from each well in proportion to its participation factor. The burden was placed on the purchaser to regulate production from the wells.[80] The result was that the total monthly allowable was always equal to the total production from the field, because the actual allowable was not assigned until after the actual production figures were submitted.

In 1961, the "Henze type" order was held invalid by the Texas Supreme Court in Rudman v. Railroad Commission.[81] The order was declared void, because of its assignment of monthly allowables retroactively to actual production which failed to conform to the statutory mandate[82] requiring such allowables to be determined prospectively by the Commission.

Even if the Texas legislature were disposed at some future date to amend the conservation statute so as to authorize the Railroad Commission to promulgate "Henze type" proration orders, such orders might still meet the same unkind fate as did the ratable-take orders of

the Kansas Corporation Commission which were overturned in 1963. One of the principal advantages of the "Henze type" order lay in the fact that it was a simple method of accomplishing ratable production. This was achieved by requiring the purchaser to take his gas requirements from each well proportionate to the well's prorated allowable represented by its participation factor. In effect, the responsibility for ensuring ratable taking of production was placed on the purchaser. Herein lies the possible foible, because in the Northern Natural Gas Company decision the point was stressed that the unconstitutional ratable-take orders there involved, in effect, shifted the burden of balancing natural gas production from the Corporation Commission to the interstate purchasers.[83] It would appear that a similar objection could be raised with regard to a "Henze type" order adopted for a field which had connections with an interstate purchaser. So, although the "Henze type" order was once praised as a simple and effective method of accomplishing ratable production in reservoirs selling gas to only one purchaser,[84] it now lies in the judicial dustbin of invalid administrative remedies and the chances of its successful resurrection appears to be quite remote.

Recognizing that ratable-take orders have lost their vitality when applied to interstate purchasers, the Texas Railroad Commission has attempted to achieve the same degree of protection for correlative the Kansas Corporation Commission which were overturned in 1954. One of the principal advantages of the "Hanna type" order lay in the fact that it was a simple method of accomplishing ratable production. This was achieved by requiring the purchaser to take his gas requirements from each well proportionate to the well's acreage allowable represented by the production factor. In effect, the responsibility for assuring ratable taking of production was placed on the purchaser. Herein lies the possible defect, because in the Northern Natural Gas Company decision the point was stressed that the unconstitutional ratable-take orders there involved, in effect, shifted the burden of balancing natural gas production from the Corporation Commission to the interstate purchasers.[33] It would appear that a similar objection could be raised with regard to a "Hanna type" order adopted for a field which had connections with an interstate operator. So, although the "Hanna type" order was once praised as a simple and effective method of accomplishing ratable production in reservoirs selling gas to only one purchaser,[34] it now lies in the judicial junkpile of invalid administrative agencies and the chances of its successful resurrection appear to be quite remote.

Recognizing that ratable-take orders have lost their vitality when applied to interstate purchasers, the Texas Railroad Commission has attempted to achieve the same degree of protection for correlative rights by means of a so-called "ratable production" order. In 1964, the Commission found that a producer in the West Lucky (Upper Hardy Horn) Field in Matagorda County, systematically had been unable to produce his allowable of that field's market demand. The Commission took cognizance of the fact that the operation of the statewide balancing rule had been abused by cancellation of this operator's underproduction to his detriment. Although it declared that such a regulation is ordinarily an effective tool in the handling of gas production, the Railroad Commission decided to suspend the balancing rule in order to protect the right of the petitioning operator to produce and sell his fair share of the hydrocarbons in the reservoir. The special order,[85] required each producer in the field to operate under exacting allowable and production conditions until such time as cooperation in fulfilling non-discriminatory production could be assured. Each producer was ordered to produce each of its gas wells in accordance with the field allocation regulation. All overproduction from the field was to be balanced during the first month following such overproduction and underproduction was to be cancelled at the end of each month. The use of producers' forecasts was discontinued and gas nominations from purchasers were required for the purpose of determining market demand. The Commission specifically announced that its order was not attempting to compel any purchaser to take gas from the field in excess of its actual demand, but was merely

requiring such gas to be produced ratably. The desired indirect effect of this order, however, was to squeeze the purchasers into the position where they would have to purchase ratably in order to meet their demands for gas from the field.

Any analysis of the proration system of natural gas production in Texas should take into account the fact that the Railroad Commission has several different allocation formulas in effect. For example, in 1963, the Commission adopted an allocation formula for the Parnell Fields (Morrow Gas) in Ochiltree County, based upon the proportion of acreage assigned to each well in proportion to the total acreage of all prorated wells.[86] In the Garcia Field in Starr County, the formula is based upon a 50°/o-acreage and a 50°/o-well ratio.[87] In the Shepherd (Mellinger Sand) Field in Hidalgo County, the proration formula is determined on a two-thirds acreage and a one-third well basis.[88]

It goes without saying that the adjustments built into the ordinary statewide balancing rule are necessary under the present system. Elimination of all overproduction would require accurate market demand determinations and these are made difficult, if for no other reason, by the recurring periods of inconstant demand. The slack periods of market demand for natural gas are in April, May, October, and November. Cancellation and re-distribution of underproduction is required to prevent the accumulation of such a large volume of underproduction

that allowables will be reduced below the total required for market demand. The key to the problem lies in the utilization of all factors that will permit the Railroad Commission's determination of market demand to be as accurate as possible and perhaps in the successful operation of the "ratable production" orders which can replace the ratable-take orders formerly available for both interstate and intrastate purchasers.

The Texas system works and this fact is an accomplishment in itself. The Railroad Commission is aware of the fact that improvements could be made.[89] The Commission could tighten up its method of determining market demand, but the present system produces satisfactory results for most operators. When it detects a lack of cooperation in a field, the Commission is not hesitant about attempting to remedy it by adopting special field rules.

One observer of the Texas proration system in 1956, declared that the task of assuring ratable taking by natural gas purchasers between producers in a common reservoir was one of the most vexing problems confronting the Railroad Commission.[90] That observation remains a valid one eleven years later.

IV.

OKLAHOMA'S SYSTEM OF PRORATING NATURAL GAS

Having been credited with slightly more than 8% of the total United States production of natural gas in 1966, Oklahoma's current role as one of the top four producing states in the nation is a secure one.[91] In January, 1966, Oklahoma's natural gas reserves were being produced and marketed at an annual rate of 1.4 trillion cubic feet and approximately one-third of its production was being consumed within the state.[92] There is little doubt that natural gas is a very important and valuable natural resource throughout the "Sooner" State for out of the state's total of seventy-seven counties, oil and gas underlie seventy of them. Another indication of its vast mineral wealth is the fact that in 1958, 47% of the entire land area of Oklahoma was either under mineral lease or was productive.[93] It should come as no surprise, therefore, that Oklahoma has been in the vanguard of the forces of conservation fighting to prevent waste of these natural resources.

Responsibility for regulating the natural gas industry in Oklahoma rests with the Corporation Commission, a highly competent state administrative agency which possesses the attributes of

executive, judicial, and legislative governmental powers.[94] The Legislature of Oklahoma has granted exclusive original jurisdiction to the Corporation Commission concerning the construction, modification, or vacation of all administrative orders establishing allowable production from a gas well or unitized area.[95] The Oklahoma Oil and Gas Conservation Act[96] is a broad regulatory statute and is grounded on the state's police power to prevent the waste of natural resources vital to the general welfare. Since its creation in 1917,[97] the Oklahoma Corporation Commission has had fifty years in which to acquire an invaluable wealth of experience and expertise in the area of oil and gas conservation. This proficiency is effectively utilized today in order to achieve the three general purposes of state regulation of oil and gas production, namely: (1) the prevention of waste; (2) the protection of correlative rights; and (3) the attainment of the greatest ultimate recovery from the pool.

Six years ago, on April 1, 1961, the Oklahoma Corporation Commission adopted and promulgated new general rules and regulations for the production and conservation of oil and gas in that state.[98] Several changes in the statewide rules and regulations which had previously been established in 1946,[99] were found to be necessary in view of the fact that the Oklahoma Legislature had enacted certain conservation laws subsequent to 1946. Certain other modifications were incorporated executive, judicial, and legislative governmental powers.[54] The Legislature of Oklahoma has granted exclusive original jurisdiction to the Corporation Commission concerning the establishment, modification, or vacation of all administrative orders establishing allowable production from a gas well or unitized area.[55] The Oklahoma Oil and Gas Conservation Act[56] is a broad regulatory statute and is grounded on the state's police power to control the status of natural resources vital to the general welfare. Since its creation in 1917,[57] the Oklahoma Corporation Commission has had fifty years in which to acquire an invaluable wealth of experience and expertise in the area of oil and gas conservation. This proficiency is effectively utilized today in order to achieve the three general purposes of state regulation of oil and gas production, namely: (1) the prevention of waste, (2) the protection of correlative rights and (3) the attainment of the greatest ultimate recovery from the pool.

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The concept of physical and economic waste is a very important one in the area of oil and gas conservation. For the purposes of the rules and regulations of the Corporation Commission, the term "waste" is defined as follows:[100]

> Definition 55(b). "The term 'waste' as applied to gas, in addition to its ordinary meaning, shall include economic waste; the inefficient or wasteful utilization of gas in the operation of oil wells drilled into and producing from a common source of supply; the inefficient or wasteful utilization of gas wells drilled into and producing from a common source of supply; the production of gas in such quantities or in such a manner as unreasonably to reduce reservoir pressure or unreasonably to diminish the quantity of oil or gas that might be recovered from a common source of supply; the escape, directly or indirectly, of gas from oil wells producing from a common source of supply into the open air in excess of the amount necessary in the efficient drilling and completion or operation thereof, waste incident to the production of natural gas in excess of transportation and marketing facilities or reasonable market demand; the escape, blowing, or releasing, directly or indirectly, into the open air, of gas from wells productive of gas only, drilled into any common source of supply, save only as is necessary in the efficient drilling and completion thereof; and the unnecessary depletion or inefficient utilization of gas energy contained in a common source of supply."

Appropriate field rules and regulations for individual pools within the state are promulgated by the Corporation Commission following a hearing which results in a finding either that production ate the said rules and regulations on the basis of experience and knowledge gained by the Corporation Commission during the preceding interim period.

The concept of physical and economic waste is a very important one in the area of oil and gas conservation. For the purposes of the rules and regulations of the Corporation Commission, the term "waste" is defined as follows:[illegible]

> Definition 5(h). "The term 'waste' as applied to gas, in addition to its ordinary meaning, shall include economic waste; the inefficient or wasteful utilization of gas in the operation of oil wells drilled into and producing from a common source of supply; the inefficient or wasteful utilization of gas wells drilled into and producing from a common source of supply; the production of gas in such quantities or in such a manner as unreasonably to reduce reservoir pressure or unreasonably to diminish the quantity of oil or gas that might be recovered from a common source of supply; the escape, directly or indirectly, of gas from oil wells producing from a common source of supply into the open air in excess of the amount necessary to the efficient drilling and completion or operation thereof; waste incident to the production of natural gas in excess of transportation and marketing facilities or reasonable market demand; the escape, blowing, or releasing, directly or indirectly, into the open air, of gas from wells productive of gas only, drilled into any common source of supply, save only as is necessary in the efficient drilling and completion thereof; and the unnecessary depletion or inefficient utilization of gas energy contained in a common source of supply."

Appropriate field rules and regulations for individual pools within the state are promulgated by the Corporation Commission following a hearing which results in a finding either that production of natural gas from a reservoir is exceeding the market demand, or that such rules and regulations are necessary in order to prevent waste, increase ultimate recovery, or prevent injury to correlative rights.[101] Such findings will authorize the restriction of total pool production and the institution of a suitable allocation formula designed to accomplish equitable proration. Where there is no special pool allocation formula in effect, the authorized production of natural gas from any well located in such field is limited to 25% of its potential capacity, unless a special exemption is granted by the Corporation Commission.[102]

Determination of market demand for oil and gas is made by the Corporation Commission after due notice and hearing. At such hearing, the estimated consumption in and outside the State of Oklahoma for the ensuing monthly proration period is determined on a statewide basis.[103] The current estimated consumption and use of natural gas thereby obtained is adjusted as necessary in order to maintain adequate underground storage reserves which are essential both to assuring peacetime consumers of a continuous supply and to providing strategic national defense requirements.[104] After the Corporation Commission determines the amount of gas to be produced from all pools during the following proration period, this volume is allocated to the various pools without unreasonable discrimination and the assigned

production of each reservoir is thereupon allocated to the wells in accordance with individual field orders.[105]

The Oklahoma statute[106] defines "ratable taking" as the proportion which the natural flow of gas from the wells of one producer bears to the total amount of the natural flow belonging to the wells of fellow producers in the same common source of supply. The ratable-take provision reads as follows:[107]

> Section 233. "Any person, firm or corporation, taking gas from a gas field, except for purposes of developing a gas or oil field, and operating oil wells, and for the purpose of his own domestic use, shall take ratably from each owner of the gas in proportion to his interest in said gas, upon such terms as may be agreed upon between said owners and the party taking such, or in case they cannot agree at such price and upon such terms as may be fixed by the Corporation Commission after notice and hearing; provided that each owner shall be required to deliver this gas to a common point of delivery on or adjacent to the surface overlying such gas."

Oklahoma's ratable-take statute was enacted in 1913, but it was not construed judicially for the next thirty-three years until the 1947 decision of Republic Natural Gas Company v. Corporation Commission,[108] was handed down by the Oklahoma Supreme Court. The proration problem involved in this case originated in the great Hugoton Gas Field which underlies parts of Oklahoma, Texas, and Kansas, and covers a large area approximately one hundred and fifty miles long and fifty miles wide. The Republic Natural Gas Company was a pro-

production of each reservoir is thereupon allocated to the wells in accordance with individual field orders.[104]

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> Section 11. "Any person, firm or corporation, taking gas from a gas field, except for purposes of developing a gas or oil field, and operating oil wells, and for the purpose of his own domestic use, shall take ratably from each owner of the gas in proportion to his interest in said gas, upon such terms as may be agreed upon between said owners and the party taking same, or in case they cannot agree at such price and upon such terms as may be fixed by the Corporation Commission after notice and hearing, provided that each owner shall be required to deliver this gas to a common point of delivery on or adjacent to the surface overlying such gas."

Oklahoma's ratable-take statute was enacted in 1913, but it was not considered judicially for the next thirty-three years until the 1947 decision of Republic Natural Gas Company v. Corporation Commission,[108] was handed down by the Oklahoma Supreme Court. The particular problem involved in this case originated in the great Hugoton Gas Field which underlies parts of Oklahoma, Texas, and Kansas, and covers a large area approximately one hundred and fifty miles long and fifty miles wide. The Republic Natural Gas Company was a large ducer in both the Kansas and Oklahoma portions of the Hugoton Field and it had constructed a large network of pipe lines to facilitate the gathering of its own production which it then sold to purchasers. In April, 1944, the Peerless Oil and Gas Company drilled a producing gas well in an area of the Hugoton Field served by Republic's pipe line gathering system, but no ready market was available to the Peerless production. Invoking the ratable-take statute which had been on the books for over three decades, Peerless requested the Corporation Commission to protect its correlative rights.

The Commission found that Republic's wells almost surrounded the Peerless producing property and that drainage was occurring. Production from the Oklahoma Hugoton Field was then in excess of market demand and the Corporation Commission's findings revealed that Republic's needs did not require the full capacity of its pipe line system. The 1913 ratable-take statute specifies that any person who is engaged in the business of producing, transporting and selling natural gas is required to take ratably from other producers from the common source of supply who have no outlet for their production.[109]

The Oklahoma statutes declare that every corporation or firm which engages in the business of transporting natural gas by pipe line in the state shall be deemed to be a common purchaser[110] and a common carrier.[111] In this case, the Corporation Commission had no

difficulty in finding that the Republic Natural Gas Company was a common purchaser in the Hugoton Field and that it was therefore obligated, pursuant to the 1913 ratable-take statute, to commence taking ratably from the Peerless well. The Commission ordered Republic to permit Peerless to make a connection with its lines in the vicinity of the Peerless well. In the event that Republic refused to accede to such connection, that company would not be permitted to produce from any of its wells located in the Oklahoma portion of the Hugoton Field. Republic could satisfy either by purchasing the well's gas production or by providing Peerless with the essential pipe line transportation facilities which would carry the gas to other purchasers.

Interestingly enough, in view of the results of the Northern Natural Gas Company decision[112] which was still some six years in the future, Republic vigorously contended that the Oklahoma Corporation Commission's order invaded the exclusive domain of the Federal Power Commission and therefore unduly burdened interstate commerce in violation of the United States Constitution.[113] The Oklahoma Supreme Court disagreed with Republic that this was the case. The court held that the administrative order was valid as a legitimate protection of the correlative rights of natural gas producers. Republic's appeal to the United States Supreme Court was subsequently dismissed on the technical jurisdictional ground that the order of the state administrative agency was not final.[114]

difficulty in finding that the Republic Natural Gas Company was a common purchaser in the Hugoton Field and that it was therefore obligated, pursuant to the 1911 common-purchaser statute, to commence taking ratably from the Peerless well. The Commission ordered Republic to permit Peerless to make a connection with its lines in the vicinity of the Peerless well. In the event that Republic refused to accede to such connection, that company would not be permitted to produce from any of its wells located in the Oklahoma portion of the Hugoton Field. Republic could comply either by purchasing the well's gas production or by providing Peerless with the requisite pipe line transportation facilities which would carry the gas to other purchasers.

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The four dissenters in the Republic Natural Gas Company v. Oklahoma,[115] believed that the Oklahoma Supreme Court's decision was final for the purpose of Section 237 of the Judicial Code.[116] They also stated that they would uphold the constitutionality of the contested order. They declared:

> Oklahoma's power to regulate correlative rights in the Hugoton Field therefore does not stem from her interest merely in the preservation of the natural resources. It stems rather from the basic aim and authority of any government which seeks to protect the rights of its citizens and to secure a just accommodation of them when they clash.

A good example of how the Oklahoma proration system operates in actual practice is to be found in the order of the Corporation Commission dated February 7, 1967, establishing field rules governing the production of natural gas from the Mississippi Lime pool which underlies portions of both Garfield and Major Counties.[118]

Following hearings held on January 17, 1967, the Commission determined that field rules for this reservoir were necessary in order to protect correlative rights of the gas producers. As additional reasons for promulgating them, the Commission indicated in its findings that such field rules would prevent waste and would assure the greatest ultimate recovery from the reservoir.

The order creating the field rules specifies that the Commission shall hold hearings at regular intervals for the twin purposes of receiving purchaser nominations and estimating the anticipated market demand for

The [illegible] decisions in the *Cities Service* and the *Phillips Petroleum Co. v. Oklahoma*,[113] believed that the Oklahoma Corporation Commission [illegible] was [illegible] for the purpose of Section 1(b) of the Natural Gas Act.[114] They also stated that they would uphold the constitutionality of the commission order. They declared:

> Oklahoma's power to regulate correlative rights in the Hugoton Field therefore does not stem from her interest merely in the prevention of the physical waste. It stems rather from the basic duty and authority of any government which seeks to protect the rights of its citizens and to secure a just accommodation of those rights they share.

A good example of how the Oklahoma [illegible] Commission works in actual practice is to be found in the order of the Corporation Commission dated February 7, 1947, establishing field rules concerning the production of natural gas from the Mississippian Chert and [illegible] formation of both Garfield and Major Counties.[115]

Following hearings held on January 21, 1947, the Commission determined that field rules for this reservoir were necessary in order to protect correlative rights of all [illegible] producers. In additional [illegible] for promulgating rules, the Commission indicated in its findings that such field rules would prevent waste and would insure the greatest ultimate recovery from the reservoir.

The order creating the field rules specified that the Commission shall hold meetings at regular intervals for the sole purpose of receiving purchaser nominations and estimating the anticipated market demand for gas from the pool. These hearings then result in the establishment of what is called the pool allowable for the particular ensuing month. The pool allowable is merely the estimated market demand for a particular month which is assigned to a particular reservoir. Once it has been ascertained, the pool allowable is adjusted for un-cancelled underage credited to or overage charged against the wells in the pool. The result of such adjustment becomes the current monthly allowable for the field.

An allocation formula based upon three-fourths (75%) acreage and one-fourth (25%) pressure factors is created for the pool's non-limited wells. The field rules create two classes of gas wells: (1) "qualified" wells; and (2) "limited" wells. A well which is unable, either initially or subsequently, to produce at a monthly rate equal to the average current allowable for the preceding January, is to be classified as a "limited" well. A well which accumulates underage in excess of the maximum permitted by the field rules is also to be so classified.

After the necessary adjustments are made to the monthly pool allowable, each "limited" well is assigned a current monthly allowable which is equal to the well's tested ability to produce, and the remainder of the adjusted pool allowable is then distributed among the "qualified" wells as their current monthly allowables. However, it should be noted that these current allowables for the "qualified" wells are also subject gas from the pool. These hearings then result in the establishment of what is called the pool allowable for the particular coming month. The pool allowable is merely the estimated market demand for a particular month which is assigned to a particular reservoir. Once it has been ascertained, the pool allowable is adjusted for un-cancelled underage credited to or overage charged against the wells in the pool. The result of such adjustment becomes the current monthly allowable for the field.

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After the necessary adjustments are made to the monthly pool allowable, each "limited" well is assigned a current monthly allowable which is equal to the well's tested ability to produce, and the remainder of the adjusted pool allowable is then distributed among the "qualified" wells as their current monthly allowables. However, it should be noted that these current allowables for the "qualified" wells are also subject to adjustment. Accumulated underage is credited to the well and any accumulated overage is subtracted from it in order to arrive at the so-called "net allowable". A well's accumulated underage is carried forward for a limited period of time and is a credit to the monthly current allowable until the underage is produced. However, when the underage accumulation exceeds a volume of gas equal to six times the well's current allowable of the preceding January, all of such accumulation will be cancelled unless the well has no market outlet for its gas.

Flexibility is provided for in the order since any cancelled underage may be reinstated at any time by the Corporation Commission after notice and hearing, if there is a proper showing that the well is capable of producing the current allowable assigned to it at the time of the hearing. Accumulated overage, on the other hand, is carried forward as a charge against the well's current allowable and is subtracted from the latter figure until the overage is made up. The maximum amount of overproduction which is permitted to be accumulated by a well is a volume of gas equal to four times its current allowable for the preceding January. Once this limit is reached, the well is allowed to produce only 25% of its current allowable until such time as all of the overage is balanced.

The field rules specifically prohibit discrimination in favor of one producer or against another. Purchasers and producers are ordered to comply with the common purchaser and ratable-take provisions of the to adjustment. Accumulated underage is credited to the well, and any accumulated overage is subtracted from it in order to arrive at the so-called "net allowable". A well's accumulated underage is carried forward for a limited period of time and is a credit to the monthly current allowable until the underage is produced. However, when the underage accumulation exceeds a volume of gas equal to six times the well's current allowable of the preceding January, all of such accumulation will be cancelled unless the well has no market outlet for its gas.

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The field rules specifically prohibit discrimination in favor of one producer or against another. Purchasers and producers are obliged to comply with the common purchaser and ratable-take provisions of the

Oklahoma conservation laws. Takers of gas are required to take from all wells which they can reach by their own line or by lines provided by the various well owners in the reservoir and such takes must be ratable in accordance with the diverse allocations of well allowables.

The Carney area of the Quinton Gas Field in Oklahoma provides an excellent illustration of the type of problem with which the Corporation Commission has been confronted in its attempts to protect correlative rights. This field was discovered prior to 1932, and by 1951, there were some sixty-eight wells located within its boundaries. Five of these wells were owned by the Choctaw Gas Company and three others were operated by it in partnership with the only other operator in the field, the Oklahoma Natural Gas Company. In 1933, the Corporation Commission, after declaring them to be common purchasers, ordered the purchasing companies to take gas from the field on a ratable basis. This order did not attempt to fix the market demand for production nor was any allocation formula created for the field, although production was limited to a maximum of 25% of a well's open flow capacity. No further administrative action was taken with reference to the field for the next fifteen years, until 1947, when the Corporation Commission adopted an allocation formula for gas production emanating from the Carney area pool. This formula was based upon market demand as determined by the monthly purchaser nomina-

Oklahoma conservation laws. Takers of gas are required to take from all wells which they can reach by their own line or by lines provided by the various well owners in the reservoir and production must be ratable in accordance with the diverse allocations of each allowable.

The Carney area of the Guymon Gas Field in Oklahoma presents an excellent illustration of the type of problem with which the Corporation Commission has been confronted in its attempts to protect correlative rights. This field was discovered prior to 1951, and by 1951, there were some thirty-eight wells located within its boundaries. Five of these wells were owned by the Choctaw Gas Company and thirty others were operated by it in partnership with the only other operator in the field, the Oklahoma Natural Gas Company. In 1953, the Corporation Commission, after declaring them to be common purchasers, ordered the purchasing companies to take gas from the field on a ratable basis. This order did not attempt to fix the market demand for production nor was any allocation formula provided for the field, although production was limited to a maximum of 25% of a well's open flow capacity. No further administrative action was taken with reference to the field for the next fifteen years, until 1967, when the Corporation Commission adopted an allocation formula for gas production withdrawn from the Carney area pool. This formula was based upon market demand as determined by the monthly purchaser nominations which were required to be submitted to the Commission by the purchasing companies.

Oklahoma Natural Gas Company v. Choctaw Gas Company,[119] is a case which arose out of this contested 1947 order of the Corporation Commission that established field rules for the Carney area reservoir.[120] The five gas wells owned by Choctaw Gas Company had produced a considerable overage by operation of the prescribed allocation formula and the normal rules concerning balancing of such overproduction had been held in abeyance by the Director of Conservation pending a decision by the Corporation Commission as to whether these wells were to be shut in until they balanced, or whether such overage was to be cancelled in order to allow the wells to supply their market requirements.

On September 14, 1948, the Corporation Commission declared that Choctaw's market demand was greater than its allowable production as permitted under the allocation formula and that to shut in the overproduced wells would inconvenience the consumers who relied upon the purchasing company which had no other supply of gas available to it other than from Choctaw. The Commission's solution to the problem was in the form of an order directing the Oklahoma Natural Gas Company to permit the Choctaw Gas Company to make a connection with its lines and to purchase from it the required volume of gas necessary to satisfy Choctaw's market demand. Choctaw was to be allowed dens which were required to be submitted to the Commission by the purchasing companies.

Oklahoma Natural Gas Company v. Choctaw Gas Company.[149] In a case which arose out of this conservation 1947 order of the Corporation Commission that established field rules for the Carney Area, apparently,[150] The five gas wells owned by Choctaw Gas Company had produced a considerable overage by operation of the prorationing allocation formula, and the normal rules concerning balancing of such overproduction had been held in abeyance by the Director of Conservation pending a decision by the Corporation Commission as to whether these wells were to be shut in until they balanced, or whether such overage was to be cancelled in order to allow the wells to supply their market requirements.

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This solution, as embodied in the order of the Commission, was held invalid by the Oklahoma Supreme Court, because the tribunal could not agree that an unfair taking situation existed in the field, other than the Choctaw Gas Company's accumulated overage which the administrative order in effect sought to protect. According to the decision, the Corporation Commission had no authority to ignore the statutory prohibition against overproduction by entering an order which perpetuated that condition unless one private corporation surrendered its property to another private corporation. The court concluded its judgment by declaring: "The police power must at all times be exercised with scrupulous regard for private rights guaranteed by the constitution, and then only in the public interest and not for the benefit of a private company."[121]

Under the terms of the invalidated order, the total monthly production of natural gas from the field was to have been determined by to continue to accumulate their production until such time as the contractions were made with its co-producer and then the Gas wells were to be shut in until all of the overage was balanced. The Oklahoma Natural Gas Company wells in the field were underproduced and the Corporation Commission took the position that ratable take was impossible unless such overage was sold to Choctaw, thereby keeping the field production in balance.

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Under the theory of the legislative policy, the total monthly production of natural gas from the field was to have been determined by applying the allocation formula to the market demand. Monthly nominations of requirements of the producers were to have been utilized by the Corporation Commission in arriving at the official estimate of market demand. In other words, each gas producer in the field would have submitted a monthly estimate of the amount of gas it needed in order to satisfy its market for such period. Following this, the Commission, by means of simple arithmetic, could figure the total market demand from the field and set the allowables accordingly. Balancing of overproduction and underproduction were covered by the order which would have authorized a well to accumulate either overage or underage up to an amount equal to its largest monthly allowable during the twelve month period immediately preceding. Any well which accumulated overproduction in excess of this maximum volume of gas was to be shut in, unless the operator applied to the Corporation Commission and secured appropriate relief. The Choctaw Gas Company had successfully argued before the Commission that its overproduction was entirely caused by the fact that the Oklahoma Natural Gas Company was continually decreasing its monthly nominations for gas and that the situation could be easily corrected by the latter company's agreement to sell Choctaw sufficient gas at a reasonable price.

Following its triumphant day in court, the Oklahoma Natural Gas Company appeared before the Corporation Commission and requested

the institution of an order directing that the delinquent Choctaw wells be shut in until such time as all overproduction had been made up. In spite of Choctaw's argument that the Oklahoma Natural Gas Company was actually prorating the field by itself -- by means of its submission of low monthly nominations -- the Commission ordered the five wells shut in until they could be put in balance. Thereupon Choctaw proceeded to have its day in court as reported in Choctaw Gas Company v. Corporation Commission.[122] The Oklahoma Supreme Court held that the Corporation Commission's findings were fully supported by the evidence. Proration of the Carney area of the Quinton Gas Field was found to be necessary and the drastic measure of shutting in the overproduced wells was deemed to be essential to the enforcement of such proration. The court declared:[123]

> To protect such correlative rights, in addition to preventing waste, is one of the fundamental powers of the Corporation Commission under our proration statutes . . . And these two fundamental purposes of the exercise of the Commission's powers in proration matters are interrelated, for, if the State, through this or some other agency, could not protect such rights, and each owner of a portion of the gas in a natural reservoir was left to protect his own, we would have resort to the wasteful drilling practices and races of the pre-proration days.

Another Oklahoma statute declares that a person producing natural gas from a common source of supply may take therefrom "only such proportion of the natural gas that may be marketed without waste, as the natural flow of the well or wells owned by such person . . .

bears to the total flow of such common source of supply . . ."[124] The meaning of the term "natural flow" was construed by the Oklahoma Supreme Court in Sinclair Oil & Gas Company v. Corporation Commission.[125] Within the context of the statute, the court held that the meaning of the term was essentially equivalent to "recoverable reserves". The decision is an interesting one in that it concerns the various factors which are utilized on occasion by the Corporation Commission in establishing an appropriate allowable formula for a field.

In this case, a formula for determining the monthly allowable production from the Laverna Field was instituted by the Commission, but it was immediately challenged by certain mineral interest owners. The contested formula incorporated acreage, pressure, and potential as the key factors which were to be used in arriving at the monthly allowable for each well in the reservoir. The number of acres in the drilling and spacing unit were to be multiplied by the square root of a well's potential, times its shut in pressure, times the total current allowable of the entire field. This figure would then be divided by the field's total acreage, times the total of the potentials and the shut in pressures of all wells in the pool. Upholding the validity of this complicated formula, the Oklahoma Supreme Court held that there was substantial evidence in the record to demonstrate that each well in the bears to the total flow of such common source of supply. . ."[114] The meaning of the term "natural flow" was construed by the Oklahoma Supreme Court in Sinclair Oil & Gas Company v. Corporation Commission.[115] Within the context of the statute, the court held that the meaning of the term was essentially equivalent to "recoverable reserves". The decision is an interesting one in that it concerns the various factors which are utilized on occasion by the Corporation Commission in establishing an appropriate allowable formula for a field.

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On at least one occasion, the statutory yardsticks of natural flow and acreage were utilized by the Corporation Commission in establishing a formula for allowable production which made use of such factors as porosity and permeability of the producing sand and the thickness of the strata. This formula was contested in <u>Anderson-Prichard Oil Corporation v. Corporation Commission</u>.[176] Operation of this allocation formula served to reduce Anderson-Prichard's ratable allowable by approximately 9% of the volume it had contended for so the order and its formula were appealed to the courts on the ground that the statutory meaning of the term "natural flow" actually meant "daily rate of flow". The Oklahoma Supreme Court, recognizing that the Anderson-Prichard definition was not the same as long term potential flow, upheld the Corporation Commission's formula. Geological informatinn was an essential ingredient to this formula inasmuch as the total volume of natural gas which each well would ultimately produce from the pool had to be scientifically estimated. The Corporation Commission's equation of "recoverable reserves" with the statutory term "natural flow" was held to be in

accord with the legitimate meaning of the latter term.[127]

Finally, in 1946, the Corporation Commission moved to prevent the physical and economic waste of natural gas by imposing a minimum price to be paid for gas within the state.[128] This order withstood a challenge in Cities Service Gas Company v. Peerless Oil and Gas Company,[129] even though the statute under which the Commission purported to act did not contain specific authorization for price-fixing as a method of proration or conservation. The United States Supreme Court held that minimum prices imposed by the state did not contravene the due process or equal protection clauses of the Constitution. The administrative order was upheld, because there was ample evidence in the record to show that the low prices then obtaining for natural gas were, in fact, resulting in economic waste and were conducive to the physical waste of natural gas. A little more than eight years passed between the time that the minimum pricing order was promulgated until the United States Supreme Court declared on April 11, 1955, that such minimum price orders were invalid for the reason that they conflicted with the jurisdiction of the Federal Power Commission under the Natural Gas Act.[130]

Within three years following its action in the National Gas Pipeline Company[131] case, the United States Supreme Court dealt similar blows to the Oklahoma Corporation Commission's efforts to attack economic waste through the utilization of minimum price-fixing orders. In

1958, the Court invalidated an administrative order of the Oklahoma conservation agency which had purported to regulate the well-head sale price of natural gas sold to a processor of liquid petroleum,[132] and a similar price regulation that had been aimed at natural gas delivered to an interstate gas transmission company.[133] These decisions effectively blocked any further attempts to assail economic waste by means of preventing sales of natural gas at low prices.

Any excursus of Oklahoma's experience in the arena of regulation of oil and gas production must include mention of Gulf Oil Corporation v. Oklahoma Corporation Commission,[134] decided in 1961. The events leading up to this interesting decision began in 1956, when the Corporation Commission promulgated an order directing every crude oil purchaser in the state to purchase the exact amount of oil specified in the monthly proration allowables, unless excused from such obligation by the Commission. Gulf sought to enjoin the enforcement of this provision in federal court and contended that interstate commerce was being burdened by the Commission action. The federal court declined jurisdiction since Gulf possessed the right to obtain an adequate review of the agency's authority from the state judicial system and the United States Supreme Court dismissed Gulf's appeal.[135]

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In the late summer of 1957, Gulf declined to purchase the entire amount of oil allowed by the monthly proration order and refused to avail itself of the procedural remedy provided for by the order whereby it could seek relief from the Corporation Commission. As a result of Gulf's disobedience of its proration order, the Corporation Commission proceeded to cite the oil company for contempt. Gulf was subsequently fined a total of $305,000. and the company appealed. The Oklahoma Supreme Court decided that Gulf Oil Corporation was not a common purchaser within the meaning of the statute,[136] because the actual transporter was the Gulf Refining Company, a wholly owned subsidiary, and the tribunal refused to pierce the corporate veil.[137]

Terming the result of the decision a "misfire", one observer commented:

> The decision in this case seems to me to say only that the Oklahoma Corporation Commission, under the Oklahoma Common Purchaser Act, does not have the power to require a purchaser, which is not a "common purchaser", to purchase the full amount of oil fixed in the allowable order.

From the foregoing examples of regulation undertaken over the years, it is obvious that the Oklahoma Corporation Commission has not been reticent to experiment with many different solutions to the basic problem of providing competent protection to correlative rights. In spite of the fact that some of its responses to the need for abating economic waste have been over-turned, this conservation agency has not demonstrated any reluctance to continue its statutory mission. In its itself of the procedural remedy granted him by the order whereby it could seek relief from the Corporation Commission. As a result of Gulf's disobedience of its proration order, the Corporation Commission proceeded to cite the oil company for contempt. Gulf was subsequently fined a total of [illegible], and the company appealed. The Oklahoma Supreme Court decided that Gulf Oil Corporation was not a common purchaser within the meaning of the statute,[14] because the actual transporter was the Gulf Refining Company, a wholly owned subsidiary, and the tribunal refused to pierce the corporate veil.[15]

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According to officials of the Corporation Commission, Oklahoma is not presently experiencing any difficulties with regard to the ratable taking of its natural gas production and their position is that, at least for the moment, the problem is lying quiescent in the "Sooner" State.[139]

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V.

THE LOUISIANA METHOD OF NATURAL GAS PRORATION

Oil and gas and the valuable industries which they support are of vital importance to the continued economic well-being of Louisiana. It has been said that Louisiana is more dependent upon these natural resources for its economic strength than any of the other states in the nation.[140] In 1960, the state ranked second in the list of major producers of natural gas in America. More than one half of the state's revenues are generated by the taxes and fees paid by the oil and gas industry and an estimated 95,000 people throughout Louisiana derive their employment therefrom.[141] Seventy-five percent of the state's contribution for the annual operation of public schools is obtained from the oil and gas industry in the form of severance taxes and an estimated forty per cent of the state's financial outlay for higher education comes from the same source.[142] There can be no argument with the statement that Louisiana has uncovered an invaluable mineral treasure beneath its lands and shores.

Natural gas production in Louisiana stood at 2,357,786 million cubic feet in 1958,[143] and almost doubled a scant seven years later when

in 1965, the state's total output was 4,461,752,580 MCF.[144] At the close of 1965, Louisiana possessed estimated reserves of natural gas in the amount of 62,811,157 million cubic feet.[145] During that same year almost twenty-two percent of the state's total natural gas production came from its richly endowed tidelands.[146]

Louisiana's statutory program of conservation of its oil and gas resources is now over a quarter of a century old. In 1940, the Louisiana legislature adopted a conservation statute[147] which has been described on at least one occasion as a "militant" legislative enactment.[148] This statute authorizes the Commissioner of Conservation, an official appointed by the chief executive of the state, to regulate exploration, production, storage, proration, processing and marketing of oil and gas. It also commands him to enforce the state's conservation program in such a manner that waste of these natural resources will be effectively prevented.

Louisiana's comprehensive conservation statute was enacted by the legislature in 1940 only after the legislative committees concerned had completed a careful study of the experiences of other producing states in the operation of their laws on the subject. It replaced various conservation enactments which had been added to the statute books over the years in a piece-meal fashion.[149]

Production of natural gas pursuant to the state's conservation

In 1960, the state's total output was 4,465,772,144 MCF.[144] At the close of 1960, Louisiana possessed established reserves of natural gas in the amount of 53,813,177 million cubic feet.[145] During that same year almost twenty-two percent of the Nation's total natural gas production came from its richly endowed districts.[146]

Louisiana's statutory program of conservation of its oil and gas resources is now over a quarter of a century old. In 1940, the Louisiana legislature adopted a conservation statute[147] which has been described on at least one occasion as a "brilliant" legislative achievement.[148] This statute authorizes the Commissioner of Conservation, an official appointed by the chief executive of the state, to regulate exploration, production, storage, gathering, processing and marketing of oil and gas. It also empowers him to enforce the state's conservation program in such a manner that waste of these natural resources will be effectively prevented.

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Production of natural gas pursuant to the state's conservation law is regulated entirely in accordance with the principle of waste prevention.[150] After prohibiting the waste of oil or gas,[151] the statute defines that technical term as follows:[152]

> (1) "Waste", in addition to its ordinary meaning, means "physical waste" as that term is generally understood in the oil and gas industry. It includes:
> (a) the inefficient, excessive, or improper use or dissipation of reservoir energy; and the location, spacing, drilling, equipping, operating, or producing of an oil or gas well in a manner which results, or tends to result, in reducing the quantity of oil or gas ultimately recoverable from a pool; and
> (b) the inefficient storing of oil; the producing of oil or gas from a pool in excess of transportation or marketing facilities or of reasonable market demand; and the spacing, locating, drilling, equipping, operating, or producing of an oil or gas well in a manner causing, or tending to cause, unnecessary or excessive surface loss or destruction of oil or gas.

Equitable production from reservoirs is covered by the Louisiana conservation statute in the following manner:[153]

> Subject to the reasonable necessities for the prevention of waste, and to reasonable adjustment because of structural position, a producer's just and equitable share of the oil and gas in the pool, also referred to as the tract's just and equitable share, is that part of the authorized production of the pool, whether it be the total which could be produced without any restriction on the amount of production or whether ir be an amount less than that which the pool could produce if no restriction on amount were imposed, which is substantially in the proportion that the quantity of recoverable oil and gas in the developed area of his tract or tracts in the pool bears to the recoverable oil and gas in the total developed area of the pool, in so far as these amounts can be practically ascertained. To that

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> end, the rules, regulations, and orders of the commissioner shall be such as will prevent or minimize reasonably avoidable net drainage from each developed area, that is, drainage not equalled by counter drainage, and will give to each producer the opportunity to use his just and equitable share of the reservoir energy. In determining each producer's just and equitable share of the production authorized for the pool, the commissioner is authorized to give due consideration to the productivity of the well or wells located thereon, as determined by flow, tests, bottom hole pressure tests, or any other practical method of testing wells and producing structures, and to consider other factors and geological and engineering tests and data as may be determined by the commissioner to be pertinent or relevant to ascertaining each producer's just and equitable share of the production and reservoir energy of the field or pool.

Although the Louisiana conservation statute has been subjected to the criticism that the legislature was too generous in its delegation of broad discretionary authority to the Commissioner of Conservation, the power of the law-making body to delegate such authority has been upheld by the courts.[154] In Louisiana Gas Lands Inc. v. Burrow,[155] the state court sustained the conservation statute against an attack premised on the argument that it represented an unconstitutional delegation of legislative authority to an administrative agency.

On November 8, 1955, the Commissioner of Conservation promulgated a statewide order concerning the establishment of allowables for natural gas production in Louisiana.[156] This was the first time that a uniform system for the determination of such allowables was inaugurated in the state. The statewide order also provided for a standard

> and, the rules, regulations, and orders of the commissioner shall be such as will prevent or minimize reasonably avoidable net drainage from each developed area, that is, drainage not equalized by counter drainage, and will give to each producer the opportunity to use his just and equitable share of the reservoir energy. In determining each producer's just and equitable share of the production authorized for the pool, the commissioner is authorized to give due consideration to the productivity of the well or wells located thereon, as determined by flow tests, bottom hole pressure tests, or any other practical method of testing wells and producing structures, and to consider other factors and geological and engineering tests and data as may be determined by the commissioner to be pertinent or relevant to ascertaining each producer's just and equitable share of the production and reservoir energy of the field or pool.

Although the Louisiana conservation statute has been subjected to the criticism that the legislature was too generous in its delegation of broad discretionary authority to the Commissioner of Conservation, the power of the law-making body to delegate such authority has been upheld by the courts.[154] In Louisiana Gas Lands Inc. v. Sheriff,[155] the state court sustained the conservation statute against an attack premised on the argument that it represented an unconstitutional delegation of legislative authority to an administrative agency.

On November 6, 1951, the Commissioner of Conservation promulgated a statewide order concerning the establishment of allowables for natural gas production in Louisiana.[156] This was the first time that a uniform system for the determination of such allowables was inaugurated in the state. The statewide order also provided for a standard method of balancing accumulations of overproduction and under production. Pursuant to the dictates of this order by the Commissioner, each natural gas purchaser, user, transporter, and gathering system operator is required to file nominations indicating the volume of gas which will be purchased or withdrawn from each field during the succeeding proration period. Such nominations are to be submitted to the Department of Conservation on or before the fifth day of March, June, September, and December of each year. According to the regulation, these nominations must conform to the actual volumes of natural gas which the operators anticipate as their requirements from the particular field for the succeeding proration period.

The following year, Conservation Commissioner John B. Hussey explained the 1955 stateside conservation order as follows:[157]

> In 1955, Louisiana formulated a statewide order to accomplish uniformity in balancing methods and in balancing periods among all fields . . . We decided to use the period of a year for balancing and to balance one six months period against another, and the question arose as to which six months should be balanced against the other six months. In many of the special orders the six colder months had been used as the standard to balance aginst the six warmer months. We decided that if we used three cold months and three warm months to form each of the six months periods, that the takes should be more nearly the same and that less balancing out should be required. We then took Louisiana production for a five year period and compared every six months period beginning with each month of the year, with the succeeding six months. From this study, we determined that the gas taken between January 1 and June 30 was more nearly the same as the takes between July 1 and December 31 then any other semi-annual periods throughout the year . . .

method of balancing accumulations of overproduction and under-production. Pursuant to the provisions of this order by the Commissioner, each natural gas purchaser, user, transporter, and gathering system operator is required to file nominations indicating the volume of gas which will be purchased or withdrawn from each field during the succeeding proration period. Such nominations are to be submitted to the Department of Conservation on or before the 15th day of March, June, September, and December of each year. According to the regulations, these nominations must conform to the actual volumes of natural gas which the operators anticipate in their requirements from the particular field for the succeeding proration period.

The following year, Conservation Commissioner John B. Hussey explained the 1952 statewide conservation order as follows:[43]

> In 1950, Louisiana formulated a statewide order to accomplish uniformity in balancing periods and in balancing periods among all fields . . . the decision to use the period of a year for balancing and to balance one six months period against another, and the question arose as to which six months should be balanced against the other six months. In many of the special orders the six colder months had been used as the standard to balance against the six warmer months. We decided that if we used three cold months and three warm months to form each of the six months periods, that the takes should be more nearly the same and that this balancing end should be equalized. We then took Louisiana production for a five year period and compared every six months period beginning with each month of the year, with the succeeding six months. From this study, we determined that the gas takes between January 1 and June 30 was more nearly the same as the takes between July 1 and December 31 than any other consecutive periods throughout the year . . .

According to the provisions of the statewide conservation order, all gas wells were considered to be in perfect balance as of July 1, 1955. Wells which thereafter accumulated overproduction during the last six months of the year are supposed to be operated by the producer in such a manner during the second six months balancing period that they will achieve balance by July 1st. Any well that has accumulated overproduction as of that date will be automatically shut in and will remain inoperative until such time as the accumulated overage is entirely eliminated. Any gas well which has recorded accumulated underproduction at the close of the first balancing period in December, will be allowed to make up such underage during the succeeding balancing period, however, any underproduction remaining as of the first day of July will be cancelled outright.[158]

As originally published, this statewide conservation directive authorized the overproduction of a gas well at a monthly rate of one and one-half times the monthly allowable assigned to it. This portion of the order was amended on May 13, 1959, because the Commissioner of Conservation determined that the wide fluctuations of demand requirements by the pipe line purchasers necessitated a more liberal method of authorizing monthly overproduction.[159] The 1959 amendment authorized an increase in the amount of allowed overproduction so that a gas well could legitimately produce twice the amount of its

assigned monthly allowable.

The Louisiana Department of Conservation conducts public hearings four times a year, in March, June, September, and December, for the purpose of receiving nominations of natural gas requirements from producers throughout the state.[160] These purchaser nominations are required to be submitted on or before the fifth day of the above listed months. At the same time, the purchasers must report to the Conservation Commissioner the actual volume of gas which they purchased, used, or transported during the corresponding quarter of the previous calendar year.[161]

The nominations of gas requirements submitted by the purchasers are considered by the Conservation Commissioner along with other reports and market information available to him (such as the data available from the U.S. Bureau of Mines) and are very influential in his determination of the reasonable market demand for gas production during the ensuing quarter from each pool in the state. This total market demand requirement of each pool is then allocated among the various wells in the pool in accordance with the applicable allocation formula. In the event that a well is unable to produce its full allowable as determined by the pool allocation formula, it becomes a marginal well and the balance of its allowable is distributed to the other wells in the pool as an additional allowable.[162]

The topic of ratable taking of natural gas production is dealt assigned monthly allowable.

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The topic of ratable taking of natural gas production is dealt with in the 1955 statewide order as follows:[163]

> It is the purpose of this order to require that gas be taken ratably from wells completed in and producing from a common pool. Should any operator or any other interested party feel that gas is not being taken ratably from his well or wells then he may make that fact known to the Commissioner of Conservation and following conferences with those involved, the Commissioner may make such adjustments in allowables and take further action as he may determine appropriate to accomplish a ratable taking of gas from the various wells in the pool.

It should be noted that the current system of proration in Louisiana authorizes a well to receive an allowable representing its just and equitable share of the pool's production only after all of the necessary physical connections have been completed which will enable it to produce the allowable that is granted. This means that the nominations filed quarterly will reflect anticipated purchaser requirements only for those wells which are connected to pipe line facilities and those which will be connected during the ensuing proration periods.

The Louisiana Common Purchaser Statute[164] requires a common purchaser of natural gas to purchase the gas which is offered to him without discrimination as between producers or as between sources of supply. The statute states that every person engaged in the business of purchasing and selling natural gas in the state shall be a common purchaser. In the event that the common purchaser is unable to take all of the gas which is tendered to him, the act requires that he purchase ratably in order to

fulfill his requirements. The costs involved in physically tendering the gas to the purchaser must be borne by the Louisiana producer.

The ratable take provisions of the 1955 statewide conservation order were discussed by Conservation Commissioner Hussey, in 1956:[165]

> A provision was inserted in the order that the Commissioner of Conservation should make studies of the fields from which gas was being taken by more than one pipe line company to determine whether there was reasonably ratable takes. If the Commissioner should find discrepancies in takes, or if any producer, purchaser or other interested party should feel that gas is not being taken ratably from any particular well or in any particular field or area, a conference should be called by the Commissioner of all parties concerned and an attempt should be made to adjust the taking of gas to accomplish ratable takes.

This so-called conference method of resolving problems concerning alleged non-ratable purchasing practices is still operating in Louisiana and the results are deemed by the Commissioner's staff to be very satisfactory.[166] Whenever an isolated problem of ratable taking arises, the usual procedure involves an informal meeting in the Commissioner's office of all interested parties. The expected result of such a conference is the formulation of a "gentlemen's agreement" type of solution which is satisfactory to everyone concerned. In only one instance has the Department of Conservation actually resorted to the promulgation of an official ratable take order and even then, such formalized action on the part of the Commissioner was taken only because the agreement arrived at contained too many complex computations concerning the allowable schedules. On May 31, 1964, the

Commissioner of Conservation issued a ratable take order directed at the Chacahoula Field in Lafourche Parish, a field which consisted of five different producing sands.[167] It is the only ratable take order ever promulgated in that state.[168]

Natural gas production in Louisiana is prorated by the Department of Conservation on an individual reservoir basis. This aspect of the conservation system was explained in 1959, by Conservation Commissioner Ashton J. Moulton, as follows:[169]

> After receiving the nominations for natural gas from the gas purchasers in this state, which incidentally are filed on a reservoir basis, we determine the market demand for each gas producing reservoir and allocate that market demand to the wells completed in that reservoir. We, therefore, do not actually need to determine a market demand for the entire state since gas markets cannot be lumped together and each pipe line in effect constitutes a separate market.

Most of the field allocation formulas in effect throughout Louisiana are predicated upon a surface acreage basis whereby each well in the reservoir receives an allowable in proportion to the productive area assigned to it by the Conservation Commissioner.[170] As noted previously, these allowables for each well are published in a quarterly schedule and distributed to the operators by the Department of Conservation. The prime goal of the Commissioner's program of implementing the statutory conservation plan is to achieve a high degree of equity for each well in every field.[171]

The Louisiana Department of Conservation maintains that ratable taking of natural gas is not an important problem in that state at the present time. When an occasional problem involving a producer's complaint that his production is not being purchased ratably with other wells in the common reservoir does arise, the Conservation Commissioner convenes an informal conference in order to investigate and resolve the matter. Apparently the combination of cooperation on the part of the pipe line purchasers and gentle persuasion on the part of the Conservation Commissioner succeeds in the establishment of a harmonious resolution of such problems. These conference agreements are apparently sufficient to accomplish the equitable solution of the problem and ordinarily the Commissioner will not formalize them by issuing special ratable take orders for the pool involved.

The Louisiana Department of Conservation has found that ratable taking of natural gas is seldom an important problem in Louisiana at the present time. When an occasional problem involving a producer's complaint that his production is not being produced ratably with other wells in the common reservoir does arise, the Conservation Commissioner convenes an informal conference in order to investigate and resolve the matter. Apparently the genuine line of cooperation on the part of the pipeline purchasers and gentle persuasion on the part of the Conservation Commissioner succeeds in the establishment of a reasonable resolution of such problems. These conferences apparently are sufficient to accomplish the equitable solution of the problem; apparently the Commissioner will not have to handle them by issuing special ratable take orders for the pool involved.

VI.

THE KANSAS SCHEME OF NATURAL GAS PRORATION

Natural gas is an important natural resource in the "Jayhawker" State if for no other reason than the fact that the vast Hugoton gas field lies mostly within its borders. Approximately sixty-five percent of this enormous reservoir underlies nine counties in southwest Kansas, while Oklahoma and Texas more or less share equally in the remaining percentage.[173]

The discovery well in the Hugoton field was drilled in 1927, and by 1955, natural gas from the Kansas portion of this munificent reservoir was being utilized by more than one out of every four states in the Union.[174] Some 3,956 gas wells had been completed and connected in the Kansas field as of January 1, 1965, and were spread over approximately two and a half million acres.[175] The average rate of production for the five-year period 1960-1964 was 511.4 billion cubic feet of natural gas and approximately one-third of the field's estimated total reserve of about twenty-five trillion cubic feet had been produced as of 1965.[176]

The 1963 decision of the United States Supreme Court in <u>Northern Natural Gas Company v. State Corporation Commission</u>[177] is of cardinal importance to the various state governments in their attempts to protect the correlative rights of natural gas producers. The majority opinion in

this case voided an order entered by the Kansas Corporation Commission requiring pipe line purchasers to take ratably from all producers supplying them with natural gas from a common source of supply.

Located in the tri-state Hugoton gas field, the Northern Natural Gas Company's pipe line system connected producing wells in Kansas, Oklahoma and Texas. The company was under contract with Republic Natural Gas Company whereby the pipe line company agreed to purchase Republic's maximum allowable gas production up to sixty percent of Northern's requirements in the Kansas portion of the Hugoton reservoir, otherwise it would pay for the gas not taken. Prior to 1958, the pipe line company's purchase requirements were such that it was enabled to take ratably from all of the producers in the field without running afoul of the take-or-pay provision of its contract with Republic Natural Gas Company. Subsequent to 1958, however, Northern's requirements for natural gas dropped below the total allowed production for all of the producing wells under contract with it in the Kansas Hugoton field.

Two years earlier, in 1956, the Corporation Commission had acceded to a request by the Southwest Kansas Royalty Owners Association that an investigation be launched in order to determine whether natural gas purchasers were discriminating against Kansas producers in the Hugoton field and to ascertain whether drainage from Kansas to Oklahoma was in fact occurring.[178] As a result of extensive hearings the same year, in an order adopted by the Kansas Corporation Commission requiring pipe line purchasers to take ratably from all producers supplying them with natural gas from a common source of supply.

Located in the tri-state Hugoton gas field, the Northern Natural Gas Company's pipe line system connected producing wells in Kansas, Oklahoma and Texas. The company also was under contract with Republic Natural Gas Company whereby the pipe line company agreed to purchase Republic's maximum allowable gas production up to forty percent of Northern's requirements in the Kansas portion of the Hugoton gas field, otherwise it would pay for the gas anyway. Prior to 1944, the pipe line company's purchase requirements were such that it was enabled to take ratably from all of the producers in the field without running afoul of the take-or-pay provision of its contract with Republic Natural Gas Company. Subsequent to 1944, however, Northern's requirements for natural gas dropped below the total allowed production for all of the producing wells under contract with it in the Kansas Hugoton field.

Ten years earlier, in 1934, the Corporation Commission had acceded to a request by the Southwest Kansas Royalty Owners Association that an investigation be launched in order to determine whether natural gas purchasers were discriminating against Kansas producers in the Hugoton field and to ascertain whether drainage from Kansas to Oklahoma was in fact occurring.[378] As a result of extensive hearings concerned with this application, the Corporation Commission attempted to compel larger takes from the Kansas wells in the field by authorizing allowables which were in excess of the purchaser nominations of gas requirements. For example, in May 1956, the purchaser nominations totalled twenty-seven billion cubic feet, but the allowable production fixed for that month by the Corporation Commission was thirty-three billion cubic feet.[179] This policy of exaggerating the forecasted purchasers' needs undoubtedly aggravated the situation with respect to Northern's purchase requirements.

In 1959, the Northern Natural Gas Company was ordered to purchase gas ratably from all of the Kansas wells in the Hugoton field to which it was connected. The following year that order was superseded by a statewide order which directed all natural gas purchasers to take ratably from wells connected to their pipe line systems. Northern was faced with a choice. It could honor its contract with the Republic Natural Gas Company and thereby violate the Commission's order, or it could proceed to take ratably from all of the Kansas wells to which it was connected and thereby possibly breach its contractual commitment to Republic. The pipe line company decided to live up to its Republic contract and proceeded to challenge the ratable take order of the Corporation Commission on the grounds, among others, that the contested order unconstitutionally impinged upon the exclusive jurisdiction of the Federal Power Commission under the Natural Gas Act.[180]

concerned with this application, the Conservation Commission attempted to compel larger takes from the Kansas wells in the field by authorizing allowables which were in excess of the purchasers' nominations of gas requirements. For example, in May 1954, the purchaser nominations totalled twenty-seven billion cubic feet, but the allowable production fixed for that month by the Corporation Commission was thirty-three billion cubic feet.[179] This policy of exaggerating the respective purchasers' needs undoubtedly aggravated the situation with respect to Northern's purchase requirements.

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Reaffirming the legality of the Commission's order, the Kansas Supreme Court rejected the contention that interstate commerce was affected. The court held that the Natural Gas Act left the regulation of natural gas production to the several states and that the conservation order in question was essential if uncompensated drainage was to be prevented. Judicial notice was taken by the tribunal of the fact that unratable production from a common source of supply results in injury to correlative rights through drainage. The United States Supreme Court disagreed. Holding that the Kansas Corporation Commission's ratable take order impinged upon the exclusive jurisdiction of the Federal Power Commission over the sale and transportation of natural gas in interstate commerce for resale, the Court reversed and remanded. Since the Northern Natural Gas Company was a purchaser and not a producer, the Supreme Court held that the Commission's order was not within the purview of the production and gathering exemption of the Natural Gas Act. The majority opinion pointed out that the order dealt with the price of gas, because it concerned matters which impaired the ability of the Federal Power Commission to effectively regulate the sale of natural gas.

The three dissenters in the Northern Natural Gas Company decision pointed out that the state ratable take order did not necessarily trespass on the area of exclusive federal jurisdiction and that the mere

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The three dissenters in the Northern Natural Gas Company decision pointed out that the state ratable take order did not necessarily touched on the area of exclusive federal jurisdiction and that the state possibility of such an intrusion did not warrant an adjudication of a question of constitutional law. It had been argued that the case should be remanded to the Kansas courts in order to determine whether applicable state statutes effectively annulled the contractual obligations of the pipe line company to take or pay for the minimum volume of Republic's gas production. This argument was echoed by the dissenters sitting on the Supreme Court bench who stated their belief that constitutional questions were not to be adjudicated unless absolutely necessary. In any event, according to the minority, the majority opinion has raised serious question concerning the legality of those state conservation orders which indirectly affect an interstate natural gas purchaser's cost basis. Professor Charles J. Meyers has stated in this regard: "The decision makes the power of the states to conserve their natural resources and to regulate correlative rights in oil and gas reservoirs uncertain."[181]

The first attempt to prorate production in Kansas came in 1931, when the state legislature authorized the Public Service Commission (predecessor of the Corporation Commission), to promulgate rules and regulations for the proration of oil production.[182] It was not until 1944, that the Corporation Commission issued its permanent proration order governing natural gas production from the Kansas Hugoton field.[183] Subsequent to hearings held on September 13, 1943, the Kansas administrative

agency adopted the so-called "Basic Order for the Proration of Production From the Hugoton Gas Field" to take effect on March 31, 1944.[184] This order sought the creation of a formula which would allow each well in the reservoir to produce its allowable and to ultimately produce the amount of gas underlying the lease upon which it was located.

Investigations conducted by the Corporation Commission revealed that the prior un-prorated natural gas production from the wells in the Kansas Hugoton field had been and was inequitable and that unreasonable discrimination was in fact occurring. Of the 340 wells drilled in the huge reservoir as of 1943, eighteen of them were not connected to pipe lines and were therefore unable to produce any gas. The findings of the Commission disclosed that although some of these wells had been drilled in 1935, most of the owners of such unconnected wells had been refused pipe line connections.[185]

According to the evidence adduced at the 1943 hearing, an effective proration formula could be correctly comprised of various factors such as acreage, pressures, open-flow, porosity, and thickness of pay. After determining that acreage was the most important of these factors, the Corporation Commission incorporated it into the authorized formula. The deliverability of a well to put gas into a pipe line against pipe line pressure was adopted by the Commission as the second factor in the formula, since expert testimony had established that open-flow,

porosity, pressures and thickness of pay were all taken into account by a well's tested deliverability. A 640-acreage factor plus the ability of each well to produce natural gas against eighty percent of the average field pressure was therefore adopted as the proration formula for the Kansas Hugoton field. The present pertinent regulations read as follows:[186]

> To determine a well's quota for a given proration period, determine first the proration factor for the field by dividing the total field market demand for such period by the sum of the products of deliverability times the acreage factors of all wells in the pool, then multiply the field proration factor by the product of the deliverability times acreage factor for the well. The result reached by this calculation, as hereinafter adjusted, shall constitute the well's current allowable, in cubic feet, which it may produce for such proration period, provided, that if the current allowable so determined for any well is less than fifty MCF per day, the well shall be assigned a minimum current allowable of fifty MCF times the number of days in the proration period, unless the acreage factor for such well is either more or less than one (1). In that event, the minimum allowable so assigned shall be adjusted by multiplying said minimum allowable times the acreage factor. In order that the allocation to wells within the field may be restricted to the market demand figure determined for the proration period, the proration factor as first determined, shall be adjusted by computer computation, allowing for the additional gas necessary for allocation to minimum allowable wells.

During the fourteen years following its first proration order for the Kansas Hugoton field in 1944, the Corporation Commission conducted market demand hearings twice each year. After the Commission arrived at a determination of market demand by means of scrutinizing estimated nominations submitted by pipe line purchasers, allowable production was porosity, pressures and thickness of sand were all taken into account by a well's tested deliverability. A 50%-acreage factor plus the ability of each well to produce natural gas against eighty percent of the average field pressure was therefore adopted as the proration formula for the Kansas Hugoton field. The present pertinent regulations read as follows:

> To determine a well's quota for a given proration period, determine first the proration factor for the field by dividing the total field market demand for such period by the sum of the products of deliverability times the acreage factors of all wells in the pool, then multiply the field proration factor by the product of the deliverability times acreage factor for the well. The result reached by this calculation, as hereinafter adjusted, shall constitute the well's current allowable, in cubic feet, which it may produce for such proration period, provided, that if the current allowable so determined for any well is less than fifty MCF per day, the well shall be assigned a minimum current allowable of fifty MCF times the number of days in the proration period, unless the acreage factor for such well is either more or less than one (1). In that event, the minimum allowable so assigned shall be adjusted by multiplying said minimum allowable times the acreage factor. In order that the allocation to wells within the field may be restricted to the market demand figure determined for the proration period, the proration factor as first determined, shall be adjusted by computer computation, allowing for the additional gas necessary for allocation to minimum allowable wells.

During the fourteen years following its first proration order for the Kansas Hugoton field in 1944, the Corporation Commission conducted market demand hearings twice each year. After the Commission arrived at a determination of market demand by means of scrutinizing estimated nominations submitted by pipe line purchasers, allowable production was fixed for the two six month periods March to September and September to March. These purchaser nominations for the most part constituted the reasonable market demand as fixed by the Commission. Under the proration system then in effect, the field's underproduction for one month would be subtracted from the allowable market demand production of the succeeding month and any overproduction would be added to it. A so-called "current allowable" represented the adjusted market demand volume of gas which would then be distributed ratably to the wells in the reservoir. This system was abandoned by the Corporation Commission in May 1956, because that conservation agency concluded that the operation of the system was not flexible enough to permit one pipe line purchaser to increase its takes from the Kansas field in a situation where the other gas purchasers were content to purchase only their current volumes. In other words, if one pipe line nominated additional volumes of gas in order to meet its rising market demand, the resulting increased filed allowable would be distributed among all of the producing wells in the field and if the other purchasers declined to take their extra allowables a field underage would result and this would then be deducted from field market demand for the following month. It seemed to be a case of the tiger chasing its tail. The Commission feared that the system's inflexibility in this respect was forcing those pipe lines with expanding markets and increasing consumption used for the two six month periods April to September and October to March. These purchaser nominations for the most part constituted the reasonable current demand as fixed by the Commission. Under the proration system then in effect, the field's underproduction for one month would be carried forward into the allowable market allocation of the succeeding month and any overproduction would be taken from it. A so-called "current allowable" represented the purchasers' market demand volumes of gas which would then be distributed ratably to the wells in the reservoir. This system was abandoned by the Corporation Commission in May 1956, because that conservation agency concluded that the operation of the system was not flexible enough to permit one pipe line purchaser to increase its take from the Hugoton field in a situation where the other gas purchasers were content to purchase only their current volumes. In other words, if one pipe line nominated additional volumes of gas in order to meet its rising market demand, the resulting increased field allowable would be distributed among all of the producing wells in the field and if the other purchasers declined to take their extra allowables a field underage would result and this would then be deducted from field current demand for the following month. It seemed to be a case of the dog chasing its tail. The Commission feared that the system's inflexibility in this respect was forcing these pipe lines with expanding markets and increasing contractual requirements to seek their additional needs from wells located outside of Kansas.

After experimenting with various methods of prorating the production of the Kansas Hugoton field and after conducting extensive hearings on the subject, the Corporation Commission promulgated its findings in 1958. Because the old system of purchaser nominations had failed to reflect market demand accurately, the Commission decided to utilize other factors in addition to such nominations. Such other factors included consideration of takes from other sources of supply to which the pipe lines were connected, takes from other reservoirs within the state, the total market requirements of Kansas purchasers and the rate of increase thereof in relation to the rate of increase for gas from the Kansas Hugoton reservoir, plus any other conditions or circumstances deemed to be of value in establishing market demand.

Subsequent to the Northern Natural Gas Company decision, the Kansas Supreme Court decided Colorado Interstate Gas Company v. State Corporation Commission[187] on November 2, 1963. The Kansas court upheld the orders issued by the Corporation Commission which changed the method of establishing allowables for the Kansas Hugoton field. Citing the Champlin Refining Company case,[188] the state tribunal pointed out that Congress had not occupied the field of state control over the production of natural gas with the passage of the Natural Gas

Act. The holding of the recent *Northern Natural Gas Company* case was distinguished on the ground that the orders presently under challenge were directed only to producers and not to purchasers. On November 13, 1964, a writ of certiorari was denied by the United States Supreme Court.[189] This action of the Court in denying certiorari constitutes important evidence that the constitutional right of the states to protect correlative rights and to regulate production remains unimpaired so long as there is no direct interference with interstate gas purchasers. Such a conclusion is also buttressed by the reaffirmation of the *Champlin Refining Company*[190] holding which was made by the Court in its *Northern Natural Gas Company* decision.

Balancing of production is a critical part of the proration order for the Kansas Hugoton field. Overproduction existing at the end of a six months proration period is permitted to be carried forward as a charge against the unbalanced well's allowable for the next proration period. The regulations allow any well with an adjusted deliverability in excess of 300 MCF to accumulate overproduction to the extent of six times the amount of its current allowable assigned to it for the preceeding January.[191] If a well has underproduction at the end of a six month proration period, such underage may be carried forward as a credit which will be added to the well's allowable for the next proration period. When any well with an adjusted deliverability in excess of lel. The holding of the recent Northern Natural Gas Company case was distinguished on the ground that the orders currently under challenge were directed only to producers and not to purchasers. On November 12, 1964, a writ of certiorari was denied by the United States Supreme Court.[188] This action of the Court in denying certiorari constitutes important evidence that the constitutional right of the states to protect correlative rights and to regulate production remains unimpaired as long as there is no direct interference with interstate gas purchasers. This conclusion is also buttressed by the qualification of the Champlin Refining Company[189] holding which was made by the Court in the Northern Natural Gas Company decision.

Balancing of production is a critical part of the proration order for the Kansas Hugoton field. Overproduction existing at the end of a six-months proration period is permitted to be carried forward as a charge against the individual well's allowable for the next proration period. The regulations allow any well with an adjusted deliverability in excess of 100 MCF an accumulative overproduction to the extent of six times the amount of its current allowable assigned to it for the preceding January.[190] If a well has underproduction at the end of a six-month proration period, such shortage may be carried forward as a credit which will be added to the well's allowable for the next proration period. If any well with an adjusted deliverability in excess of

300 MCF has accumulated underproduction in excess of a volume of gas that is six times the current allowable assigned to it for the preceding January, such surplusage is required to be cancelled.[193] If a well has an adjusted deliverability of less than 300 MCF, it is allowed to accumulate debits for overproduction equal to nine times the amount of the current allowable assigned to it for the preceding January. If such well's overage exceeds this volume of gas, the operator must shut it in and postpone further production until the overproduction has been reduced to a figure representing not more than eight times the current allowable assigned for the preceding January. Accumulated underage for this type of well cannot exceed nine times the current allowable assigned for the preceding January, underproduction in excess of such volume being cancelled. The regulations specifically state that the underproduction credited to an unconnected well will not be cancelled.[194]

Natural gas proration in Kansas is set forth in the general rules and regulations of the Corporation Commission as follows:[195]

> Whenever the available production of natural gas from any common source of supply is in excess of the market demands for such gas from such source of supply, or whenever the market demands for natural gas from any common source of supply can be fulfilled only by the production of natural gas therefrom under conditions constituting waste, or whenever the Commission finds and determines that the orderly development of, and production of natural gas from, any common source of supply, requires the exercise of its jurisdiction, then any person,firm or corporation having the right to produce natural gas therefrom, may produce only such

300 MCF has accumulated underproduction in excess of a volume of gas that is six times the current allowable assigned to it for the preceding January, such surplusage is required to be cancelled.[191] If a well has an adjusted deliverability of less than 300 MCF, it is allowed to accumulate debits for overproduction equal to nine times the amount of the current allowable assigned to it for the preceding January.[192] If such well's overage exceeds this volume of gas, the operator must shut it in and postpone further production until the overproduction has been reduced to a figure representing not more than eight times the current allowable assigned for the preceding January.[193] Accumulated underage for this type of well cannot exceed nine times the current allowable assigned for the preceding January, underproduction in excess of such volume being cancelled. The regulations specifically state that the underproduction credited to an unconnected well will not be cancelled.[194]

Natural gas proration in Kansas is set forth in the general rules and regulations of the Corporation Commission as follows:[195]

> Whenever the available production of natural gas from any common source of supply is in excess of the market demands for such gas from such source of supply, or whenever the market demands for natural gas from any common source of supply can be fulfilled only by the production of natural gas therefrom under conditions constituting waste, or whenever the Commission finds and determines that the orderly development of, and production of natural gas from, any common source of supply, requires the exercise of its jurisdiction, then any person, firm or corporation having the right to produce natural gas therefrom, may produce only such

> portion of all the natural gas that may be currently produced without waste and to satisfy the market demands, as will permit each developed lease to ultimately produce approximately the amount of gas underlying such developed lease and currently produce proportionately with other developed leases in said common source of supply without uncompensated cognizable drainage between separately-owned, developed leases or parts thereof. The Commission shall so regulate the taking of natural gas from any and all such common sources of supply within the state as to prevent the inequitable or unfair taking from such common source of supply by any person, firm or corporation and to prevent unreasonable discrimination in favor of or against any producer in any such common source of supply. To attain such results the Commission shall give equitable consideration to acreage, pressure, open flow, porosity, permeability, and thickness of pay, and such other factors, conditions and circumstances as may exist in the common source of supply under consideration at the time, as may be pertinent. . .

Rule 8[illegible]-[illegible]-[illegible]19 of the General Rules and Regulations, promulgated by the Corporation Commission and effective on January 1, 1966, deals specifically with the subject of ratable production of gas from a common source of supply. It reads as follows:

> In each common source of supply under proration by this Commission, each purchaser shall take gas in proportion to the allowables from all of the wells to which it is connected and shall maintain all such wells in substantially the same proportionate status as to overproduction or underproduction: Provided, however, this rule shall not apply when a difference in proportionate status results from the inability of a well to produce proportionately with other wells connected to the purchaser.

Thus it appears that the Commission has chosen to ignore the fact that such an order is unenforceable against interstate purchasers.

The mandate from the Kansas Legislature to the Corporation

> portion of all the natural gas that may be currently produced without waste and to satisfy the market demands, as will permit each developed lease to ultimately produce approximately the amount of gas underlying such developed lease and currently produce proportionately with other developed leases in said common source of supply without uncompensated cross-drainage between separately-owned, developed leases or parts thereof. The Commission shall so regulate the taking of natural gas from any and all such common sources of supply within the state as to prevent the inequitable or unfair taking from such common source of supply by any person, firm or corporation and to prevent unreasonable discrimination in favor of or against any producer in any such common source of supply. To attain such results the Commission shall give equitable consideration to acreage, pressure, open flow, porosity, permeability, and thickness of pay, and such other factors, conditions and circumstances as may exist in the common source of supply under consideration at the time, as may be pertinent.

Rule [illegible] 19 of the General Rules and Regulations, promulgated by the Corporation Commission and effective on January 1, 1946, deals specifically with the subject of ratable production of gas from a common source of supply. It reads as follows:

> In each common source of supply under regulation by this Commission, each purchaser shall take gas in proportion to the allowables from all of the wells to which it is connected and shall maintain all such wells in substantially the same proportionate status as to overproduction or underproduction. Provided, however, this rule shall not apply when a difference in proportionate status results from the inability of a well to produce proportionately with other wells connected to the purchaser.

Thus it appears that the Commission has chosen to ignore the fact that such an order is unenforceable against interstate purchasers.

The mandate from the Kansas Legislature to the Commission

Commission requires that conservation body to consider reasonable current requirements for natural gas consumption both within and without the state in determining market demand.[196] The statute also orders the Corporation Commission to consider other factors, conditions or circumstances which would be helpful to it in making such a determination.

Under the present proration system extant in Kansas, the pipe line purchasers submit their nominations of natural gas requirements to the Corporation Commission each month on an individual pool basis. Such purchaser nominations, together with the additional factors employed by the Commission, form the nucleus of reasonable market demand determinations of the conservation agency. Every six months the Commission issues a proration order which sets forth the market demand allowables on a month-to-month basis.

Hearings were held by the Corporation Commission throughout 1965, concerning an application filed by the Cities Service Oil Company to consider amending the basic proration order for the Kansas Hugoton gas field. Cities Service proposed that the field's allocation formula be changed from an adjusted deliverability model to one utilizing a so-called reserve index formula. The proposed reserve index formula would consider pressure history, cumulative production and remaining reserves calculated to a specified pressure. The reserve index of a well would be defined as the calculated volume of gas in millions of cubic feet

remaining in place to the standard field pressure and would be determined by the production history and pressures of individual wells.[197] Some [illegible],000 pages of transcript were recorded during the course of these very extensive hearings and the matter is still under advisement by the Corporation Commission.[198]

One of the current problems that exists in the Kansas Hugoton field is the fact that some of the pipe line purchasers cannot take all of their allowable production from the producers, because of limited facilities which the Federal Power Commission refuses to permit to be expanded.[199]

With the exception of the few instances where producers in the Kansas Hugoton field have accumulated large volumes of underproduction, because of the inability of their purchasers to expand their facilities, the Corporation Commission is of the opinion that no serious problem involving the ratable taking of gas exists today in Kansas. A high degree of cooperation and sympathetic understanding apparently marks the relationship between producers and purchasers. If a ratable take problem should develop in the future, the Commission stands ready to employ the solution provided by the use of ratable production orders directed solely at the operators of the wells.[200]

VII.

CONCLUSION

In June, 1966, a sub-committee of the Interstate Oil Compact's committee on regulatory practices reported that the problem of ensuring the ratable taking of natural gas production was not currently a pressing one for most state conservation agencies.[201] The sub-committee's study of the situation revealed that the great majority of natural gas producers were successfully securing market outlets for their production with reasonable promptness. Although the report noted that there were some natural gas reserves which remained unconnected to pipe line facilities, it credited the rapidly increasing consumer demand for natural gas with having abated the problem of non-ratable taking in most instances.

For many years a lack of adequate storage facilities contributed to wide seasonal fluctuations in natural gas production. Today, expanded underground storage facilities and the development of huge above-ground containers have helped to reduce such wide variations in demand. It has been estimated that the present storage capacity for natural gas in the United States is sufficient to contain almost twenty-five percent of the annual marketed production.[202] The ever-increasing use of gas air conditioning has also tended to even-out the demand during the warmer months of the year.

A tremendous growth was experienced by the natural gas industry in the United States following the end of World War II. More than 65,000 miles of natural gas pipe lines were constructed in the first decade following the termination of hostilities.[103] By 1963, almost 200,000 miles of natural gas transmission lines were in existence in this country.[104] In 1965, thirty-one percent of the energy consumption in the United States was derived from the natural gas production in that year of 16,039 billion cubic feet.[105] On April 16, 1967, Mr. Frank C. Bolton, a Mobil Oil Corporation vice-president, publicly stated his opinion that within the next five years natural gas producers in the United States will find themselves unable to meet the demands from purchasers.[106] He said: "From a condition of surplus supply, we are in or at least on the threshold of a market characterized by demand requirements exceeding supply."[107] Since most problems of ratable take arise when market demand is relatively low in proportion to production, the future outlook of a plentiful demand for natural gas may well cause such problems to become items of historical significance only in the annals of conservation.

Prior to the 1963 decision of the United States Supreme Court in <u>Northern Natural Gas Company v. State Corporation Commission,</u>[108] it was generally agreed that there were two basic approaches to the problem of securing the ratable take of a reservoir's production. One approach consisted of the institution of effective control over the production of

A tremendous growth was experienced by the natural gas industry in the United States following the end of World War II. More than 85,000 miles of natural gas pipe lines were constructed in the first decade following the termination of hostilities.[103] By 1954, almost 209,000 miles of natural gas transmission lines were in existence in this country.[104] In 1965, thirty-one percent of the energy consumption in the United States was derived from the natural gas production in that year of 14,039 billion cubic feet.[105] On April 10, 1967, Mr. Frank C. Bolton, a Mobil Oil Corporation vice-president, publicly stated his opinion that within the next five years natural gas producers in the United States will find themselves unable to meet the demands from purchasers.[106] He said: "From a condition of surplus supply, we are in or at least on the threshold of a market characterized by demand requirements exceeding supply."[107] Since most problems of ratable take arise when market demand is relatively low in proportion to production, the future outlook of a plentiful demand for natural gas may well cause such problems to become items of historical significance only in the annals of conservation.

Prior to the 1963 decision of the United States Supreme Court in Northern Natural Gas Company v. State Corporation Commission,[108] it was generally agreed that there were two basic approaches to the problem of securing the ratable take of a reservoir's production. One approach consisted of the institution of effective control over the production of natural gas by means of proration orders and allowable formulas, whereas the other pathway called for the establishment of control over the purchasers of such production. The latter was achieved through the utilization of common purchaser and ratable take statutes which were specifically designed to prevent discrimination in favor of or against producers from a common source of supply.[109] Now that interstate purchasers of natural gas are outside the legal pale of state ratable take orders it would appear that there is but one way remaining to successfully attack a situation where correlative rights are being injured by non-ratable purchases of interstate pipe line purchasers. The Texas Railroad Commission has already resorted to the use of so-called "ratable production orders" directed solely to producers,[110] while conservation officials in Oklahoma and Kansas have acknowledged that such remedial action would be employed by their agencies should the need arise.

The constitutional immunity now shielding the interstate purchasers of natural gas has rendered virtually useless the various state statutes relating to ratable take and common purchasing. The statutory machinery designed to prevent discrimination in the production of natural gas will undoubtedly soon begin to rust, because of the legal impossibility of implementing it in an equitable fashion by ratable take orders directed to <u>all</u> purchasers from a reservoir. In the interval since the <u>Northern</u>

natural gas by means of proration orders and allowable formulas, whereas the other pathway called for the establishment of control over the purchasers of such production. The latter was achieved through the utilization of common purchaser and ratable take statutes which were specifically designed to prevent discrimination in favor of or against producers from a common source of supply.[109] Now that interstate purchasers of natural gas are outside the legal pale of state ratable take orders it would appear that there is but one way remaining to successfully attack a situation where correlative rights are being injured by non-ratable purchases of interstate pipeline purchasers. The Texas Railroad Commission has already resorted to the use of so-called "ratable production orders" directed solely to producers,[110] while conservation officials in Oklahoma and Kansas have acknowledged that such remedial action would be employed by their agencies should the need arise.[111]

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Natural Gas Company decision, only two ratable take orders have been issued in the four states in question. The Texas order was directed solely to an intrastate purchaser[11] and the Louisiana action was taken only after all of the interested parties had unanimously agreed upon its necessity.[12] In the event that the conservation agencies are some day confronted with a recalcitrant purchaser in a situation involving interstate takers, the statutory machinery which was enacted in order to cope with discriminatory purchases will probably fail to function.

It is submitted that the reaffirmation of the Champlin Refining Company[13] holding by the United States Supreme Court in its Northern Natural Gas Company decision, together with that tribunal's denial of certiorari in Colorado Interstate Gas Company v. State Corporation Commission,[14] signals a green light of constitutionality to state ratable production orders involving only producers.

But, if ratable production orders constitute the alternative constitutional means by which the states may seek to protect correlative rights, their practical effectiveness must be evaluated. Such a method of assuring ratable production necessitates an accurate forecast of the monthly requirements of the purchasers. A tight rein on overages and underages must be maintained by the conservation agency and any overproduced wells must be shut-in until they achieve perfect balance. The

Natural Gas Company decision, only two ratable take orders have been issued in the four states in question. The Texas order was directed solely to an intrastate purchaser[11] and the Louisiana order was taken only after all of the interested parties had unanimously agreed upon its necessity.[12] In the event that the conservation agencies are squarely confronted with a recalcitrant purchaser in a situation involving interstate takers, the statutory machinery which was enacted in order to cope with discriminatory purchases will probably fail to function.

It is submitted that the reaffirmation of the *Champlin Refining Company*[13] holding by the United States Supreme Court in the *Northern Natural Gas Company* decision, together with that tribunal's denial of certiorari in *Colorado Interstate Gas Company v. State Corporation Commission*,[14] signals a green light of constitutionality to state ratable production orders involving only producers.

But, if ratable production orders constitute the alternative constitutional means by which the states may seek to protect correlative rights, their practical effectiveness must be evaluated. Such a method of assuring ratable production necessitates an accurate forecast of the monthly requirements of the purchasers. A tight rein on overages and underages must be maintained by the conservation agency and any overproduced wells must be shut-in until they achieve in-fact balance. The closing in or over-produced wells must be timely ordered so that wells with accumulated underages will still possess the ability to supply the volume of gas which would otherwise have been obtained from the shut-in wells. The following hypothetical example illustrates how ratable production theoretically might be accomplished by means of an order directed solely to the producers in a field which has only one purchaser.

Assume that A, B, C and D each own one well in the field and that they are each entitled to share equally in the total production under the allocation formula for the reservoir. X, an interstate purchaser, is the only pipe line connected to the field. For the month of March, X nominates forty million cubic feet as its forecast of estimated gas requirements. The conservation agency determines forty million cubic feet to be the market demand for March and distributes this volume of gas to the four producers: A, B, C and D each receiving an allowable of ten million cubic feet. The producers are commanded by the conservation agency to refrain from over-producing their wells on pain of having them shut-in during the succeeding month until balanced. Strict enforcement of the ratable production order results in X being indirectly compelled to take ten million cubic feet of gas from each of the four producers in order to acquire its total requirement of forty million cubic feet from the reservoir. If X takes twenty million cubic feet from A, ten million cubic feet from B, and five million cubic feet from each of the remaining

producers, A's over-produced well subsequently will be shut-in during the following month and X will be required to take his requirements from B, C and D. Assuming that X requires forty million cubic feet during the following month, B's allowable would be set at ten million cubic feet while C and D would each be permitted to produce fifteen million cubic feet, because of their over-produced status.

Note that if the single purchaser of the field production happened to be an intrastate purchaser, the conservation agency could utilize ratable take orders directed to it in order to achieve ratable production.[15]

The problems involved with accomplishing ratable production in fields where there are multi-purchasers appear to defy solution. Suppose, for example, that there are only two producers in a field and each is under contract to sell gas to different purchasers. If the allocation formula operated to give each producer an equal share of total production and if each purchaser required identical volumes of gas, ratable production could be readily accomplished. What happens, however, in a situation where one purchaser's requirements are less than the volume needed by the other pipe line in order to satisfy its demand? Consider the following hypothetical situation:

Producer A is connected to pipe line X.

Producer B is connected to pipe line Y.

X nominates fifty million cubic feet of gas as its estimated requirement for the month of March. Y's nomination for that month is only thirty million cubic feet. If the conservation agency fixes total market demand at eight million cubic feet and allocates this volume equally to A and B, purchaser Y will leave B's well under-produced by ten million cubic feet. Purchaser X will either take its full requirement of fifty million cubic feet from A and therefore place the well in an over-produced category which will result in its being shut-in, or will take A's allowable production of forty million cubic feet and seek an additional ten million cubic feet elsewhere.

The problem of achieving ratability in a multi-purchaser situation would be complicated enough even if the state conservation agency were free to legally resort to statutory common purchaser remedies, but appears to be a thousand-fold more complex when the only available solution lies in the utilization of ratable production orders involving only producers.

Natural gas production lacks the degree of flexibility which is found in the production of oil. The fact that gas reserves are committed by long-term contracts to specific purchasers make it difficult to employ increased interconnection of pipe line facilities as a solution to the type of problem outlined above. There appears to be no way of surmounting

the contractual obligations which preclude producers from selling a portion of their allowed production to purchasers other than those to whom they have contracted with concerning their production. A further complicating factor is the possible disparity in the prices specified by the terms of the individual purchase contracts. Assuming that it was legally possible for him to do so, would a producer be willing to sell his underproduction to a different purchaser at a price less than that specified by the terms of his contract with his regular purchaser? On the other hand, would a purchaser be willing to pay more for such gas than the price provided for in its contract with another producer? Pervading the entire problem is the Federal Power Commission's requirement of dedicated gas reserves which are irrevocably dedicated to interstate markets.[216] In short, the state's authority has been so constricted that it would appear to be impossible from a legal standpoint for it to devise a successful method of protecting correlative rights in every situation.

Although the conservation officials in Kansas, Louisiana, Oklahoma and Texas readily acknowledge the fact that ratable take orders have lost most of their legal vitality since 1963, they nevertheless exhibit a unanimous lack of apparent concern regarding that loss. This interesting attitude probably finds its basis in the fact that no serious the contractual obligations which preclude producers from selling a portion of their allowed production to purchasers other than those to whom they have contracted with concerning their production. A further complicating factor is the possible diversity in the prices specified by the terms of the individual purchase contracts. Assuming that it was legally possible for him to do so, would a producer be willing to sell his uncaptured production to a different purchaser at a price less than that specified by the terms of his contract with his regular purchaser? On the other hand, would a purchaser be willing to pay more for such gas than the price provided for in its contract with another producer? Pervading the entire problem is the Federal Power Commission's requirement of dedicated gas reserves which are irrevocably dedicated to interstate markets.[114] In short, the state's authority has been so constricted that it would appear to be impossible from a legal standpoint for it to devise a successful method of protecting correlative rights in every situation.

Although the conservation officials in Kansas, Louisiana, Oklahoma and Texas readily acknowledge the fact that royalty owners have lost most of their legal vitality since 1954, they nevertheless exhibit a conspicuous lack of apparent concern regarding that loss. This interesting attitude probably finds its basis in the fact that no serious problems of ratable purchasing presently plague their hearing calendars. Perhaps, also, such sanguinity stems from their belief that should the need arise, correlative rights can still be protected, albeit the "hard way", by orders directed only to natural gas producers. It is submitted that such a belief may well prove to be unduly optimistic.

FOOTNOTES

1. 15 U.S.C. §717 (w) (1938).

2. Id. §717 (b).

3. 372 U.S. 84 (1963).

4. C. Meyers, "Federal Preemption and State Conservation in Northern Natural Gas," 77 Harv. L. Rev. (1963) at 690.

5. Leeston, Crichton, Jacobs, "The Dynamic Natural Gas Industry", U. of Okla. Press (1963) at 164-65.

6. 372 U.S., supra note 3, at 91-93.

7. K. Heady, "State Conservation Regulation and the Proposed R-199", VII Interstate Oil Compact Comm'n. Comm. Bull., No. 1 (June 1965) at 35.

8. 372 U.S., supra note 3 at 94.

9. 186 U.S., 110 (194[illegible]).

10. M. Gist, "State Ratable Purchase Orders - Conflict With The Natural Gas Act", 17 Sw. L. J. (1963) at 633.

11. R. Caro, "Production and Utilization of Gas in Venezuela," II Interstate Oil Compact Comm'n. Comm. Bull. (June 1960) at 46.

12. W. Summers, "The Modern Theory and Practical Application of Statutes for the Conservation of Oil and Gas", Legal History of Conservation (1938) at 1.

13. I. Butler, "The Texas Market Demand Statute and the Experiences in its Application to Practical Conditions," II Interstate Oil Compact Comm'n. Comm. Bull. (Dec. 1960) at 1.

14. R. Williams, "Nature and Effect of Conservation Orders", 8 Rocky Mt. Mineral Law Inst. (1963) at 434.

15. *Id.*

16. *Conservation of Natural Resources* (G. Smith ed. 1950) at 381.

17. F. Hall, "The Benefits of Conservation to my State", XIV *Oil and Gas Compact Bull.* (Dec. 1955) at 1[illegible].

18. R. Williams, *supra* note 14.

19. E. Arn, "Growth of Conservation", XII *Interstate Oil Compact Q. Bull.* (Dec. 1953) at 9.

20. G. Low, "Common Purchasers of Oil and Gas", 39 Texas L. Rev. (1961) at 84.

21. 177 U.S. 190 (1900).

22. F. Rogers, "Oklahoma's New Rules and Regulations", IV *Interstate Oil Compact Comm'n. Comm. Bull.* (June 196[illegible]) at 39.

23. W. Summers, 1A *The Law of Oil and Gas*, §106 (1954) at 174.

24. F. Rogers, *supra* note 22.

25. G. Low, *supra* note 20 at 87.

26. J. Hussey, "Ratable Take," XV *Oil and Gas Compact Bull.* (Dec. 1956) at [illegible].

27. *Tex. Rev. Civ. Stat. Ann.*, art. 6008, §10 (1950).

28. *Gulf Oil Corp. v. Okla.*, 360 U.S. 933 (1961).

29. G. Low, *supra* note 20 at 90.

30. J. Stayton, "Proration of Gas", 14 *Inst. on Oil and Gas and Taxation* (1963) at 3-4.

31. *A Form for an Oil and Gas Conservation Statute*, Interstate Oil Compact Comm'n. (1959).

32. J. Campbell, "Common Purchaser and Ratable Take Laws", 11 Interstate Oil Compact Comm'n. Comm. Bull. (June 1960) at 1.

33. Id.

34. Tex. Rev. Civ. Stat. Ann., art. 6008 (1950).

35. Texas Constitution, art. XVI, §59 (a).

36. Tex. Rev. Civ. Stat. Ann.,art. 6008, §11 (1950).

37. Id.

38. J. Stayton, supra note 30 at 9.

39. Davis and Willbern, "Administrative Control of Oil Production in Texas",22 Texas L. Rev. (1944) at 149.

40. Tex. Rev. Civ. Stat. Ann. , art. 6008, §12 (1950).

41. Davis and Willbern, supra note 39 at 150.

42. Texas R. R. Comm'n. Statewide Rules, Rule 28 (A) (1964).

43. Id., Rule 29.

44. Byram, Texas Oil and Gas Handbook (1964) at 87.

45. Texas R. R. Comm'n. Statewide Rules, Rule 31 (F) (1964).

46. Tex. Rev. Civ. Stat. Ann. , art. 6049 (c) 4 (1950).

47. Tex. Rev. Civ. Stat. Ann., art. 6008, §13 (1950).

48. Id.

49. J. Stayton, supra note 30 at 14.

50. Howell and Whitworth, "Recent Developments in Gas Proration", 41 Texas L. Rev. (1963) at 665.

51. Texas R. R. Comm'n. Statewide Rules, Rule 30 (A) (1964).

32. J. Campbell, "Common Purchaser and Ratable Take Laws", 11 Interstate Oil Compact Comm'n. Comm. Bull. (June 1960) at 1.

33. Id.

34. Tex. Rev. Civ. Stat. Ann., art. 6008 (1950).

35. Texas Constitution, art. XVI, §59 (a).

36. Tex. Rev. Civ. Stat. Ann., art. 6008, §12 (1950).

37. Id.

38. J. Simpson, supra note 30 at 9.

39. Boyd and Wilbern, "Administrative Control of Oil Production in Texas", 22 Texas L. Rev. (1944) at 149.

40. Tex. Rev. Civ. Stat. Ann., art. 6008, §12 (1950).

41. Boyd and Wilbern, supra note 39 at 150.

42. Texas R. R. Comm'n, Statewide Rules, Rule 36 (A) (1944).

43. Id., Rule 37.

44. Byrne, Texas Oil and Gas Handbook (1960) at 87.

45. Texas R. R. Comm'n, Statewide Rules, Rule 32 (F) (1944).

46. Tex. Rev. Civ. Stat. Ann., art. 6049 (c) 4 (1950).

47. Tex. Rev. Civ. Stat. Ann., art. 6008, §12 (1950).

48. Id.

49. J. Simpson, supra note 30 at 14.

50. Howell and Whitworth, "Recent Developments in Gas Proration", 43 Texas L. Rev. (1965) at 865.

51. Texas R. R. Comm'n, Statewide Rules, Rule 30 (A) (1944).

52. *Id.*, Rule 30 (B).

53. *Id.*, Rule 31.

54. *Tex. Rev. Civ. Stat. Ann.*, art. 6008, §14 (1950).

55. *Id.*

56. J. Stayton, *supra* note 30 at 30.

57. Corzelius v. Harrell, 179 S.W.2d 419 (1944); appeal dismissed as moot, 186 S.W.2d 961 (1945).

58. *Tex. Rev. Civ. Stat. Ann.*, art. 6008, §10 (1950).

59. 346 S.W.2d 801 (1961).

60. W. Summers, *supra* note 23, §86 at 59.

61. 357 S.W.2d 364 (1964).

62. Hardwicke and Woodward, "Fair Share and the Small Tract in Texas", 41 *Texas L. Rev.* (1963) at 83.

63. 380 S.W.2d 599 (1964).

64. R.R. Comm'n. v. Shell Oil Co., 380 S.W.2d 556 (1964).

65. Discussion Note, 20 *Oil and Gas Reporter* (1964) at 287-88.

66. E. Kuntz, "Correlative Rights of Parties Owning Interests in a Common Source of Supply", 17 *Inst. of Oil and Gas and Taxation* (1966) at 243.

67. 302 S.W.2d 238 (1957).

68. 405 S.W.2d 313 (1966).

69. *Tex. Rev. Civ. Stat. Ann.*, art. 5049(a), §8a-8b, incl. (1950).

70. R. R. Comm'n. v. Permian Basin Pipeline Co., *supra* note 67.

71. *Supra*, note 68.

72. 59 F.2d 750 (1932).

73. *Supra*, note 3.

74. Casenote, 21 *Sw. L. J.* No. 1 (Spring 1967) at 380.

75. 378 S.W.2d 343 (1964).

76. 367 F.2d 104 (1966).

77. Howell and Whitworth, *supra*, note 50 at 678.

78. 367 F.2d 84 (1966).

79. *Id.*, at 99-100.

80. J. Cameron, "How Texas Prorates Gas", XV *Oil and Gas Compact Bull.*, No. 2 (Dec. 1956) at 34.

81. 349 S.W.2d 717 (1961).

82. *Tex. Rev. Civ. Stat. Ann.*, art. 6008, §12 (1950).

83. *Supra*, note 3 at 92.

84. J. Stayton, *supra* note 30 at 18.

85. Texas R. R. Comm'n. Special Order No. 3-53 (Sept. 28, 1964).

86. Texas R. R. Comm'n. Special Order No. 10-53 (April 1, 1964).

87. Texas R. R. Comm'n. Special Order No. 4-3594 (Aug. 18, 1958).

88. Texas R. R. Comm'n. Special Order No. 4-37,765 (Mar. 4, 1958).

89. Interview with Bob R. Harris, Director of Research and Inspection, Texas R. R. Comm'n., in Austin, Texas, on Oct. 20, 1966.

90. D. Kelly, "Gas Proration and Ratable Taking in Texas", 19 *Texas Bar J.* (Dec. 1956) at 763.

91. XXV *Oil and Gas Compact Bull.* (June 1966) at 32.

92. Id. at 6.

93. Conservation of Oil and Gas (R. Sullivan ed. 1960) at 187.

94. F. Rogers, supra, note 22 at 39.

95. Okla. Stat., Tit. 52, §87.1, 97 (1941).

96. Okla. Stat., Tit. 52, ch. 3 (1941).

97. Legal History of Conservation of Oil and Gas, (ABA Section of Mineral Law 1938) at 146.

98. Okla. Corp. Comm'n. Order No. 44297 (Jan. 17, 1961).

99. Okla. Corp. Comm'n. Order No. 19334 (Oct. 24, 1946).

100. Okla. Corp. Comm'n. Order No. 44297 (Jan. 17, 1961) at 8.

101. Id., §108(a) at 12.

102. Id., §401(a) at 51.

103. Id., §701(a) at 67.

104. Id., §701(c) at 67.

105. Id., §701(d) at 68-69.

106. Okla. Stat., Tit. 52, §232 (1941).

107. Id., §233.

108. 180 P.2d 1009 (1947).

109. Okla. Stat., Tit. 52, §233 (1941).

110. Okla. Stat., Tit. 52, § 233 (1941).

111. Okla. Stat., Tit. 52, § 234 (1941).

112. Supra, note 3.

113. Art. I, §8.

114. Republic Natural Gas Co. v. Okla., 334 U.S. 62 (1948).

115. *Id.*

116. 28 U.S.C. 1344.

117. *Supra,* note 114 at 95.

118. Okla. Corp. Comm'n. Order No. 64959 (Feb. 7, 1967).

119. 236 P.2d 970 (1951).

120. Okla. Corp. Comm'n. Order No. 20539 (Oct. 21, 1947).

121. Oklahoma Natural Gas Co. v. Choctaw Gas Co., *supra,* note 119 at 977.

122. 295 P.2d 800 (1956).

123. *Id.*, at 805.

124. *Okla. Stat.*, Tit. 52, §239 (1941).

125. 378 P. 2d 847 (1963).

126. 252 P. 2d 450 (1953).

127. Comment, 6 *Okla. L. Rev.* (1953) at 496.

128. Okla. Corp. Comm'n. Order No. 19514 (Dec. 9, 1946).

129. 220 P. 2d 279 (1950); aff'd 340 U.S. 179 (1950).

130. National Gas Pipeline Co. of America v. Corp. Comm'n., 349 U.S. 44 (1955).

131. *Id.*

132. Phillips Petroleum Co. v. Okla. Corp. Comm'n., 355 U.S. 425 (1958).

133. Michigan Wisconsin Pipeline Co. v. Corp. Comm'n., 355 U.S. 425 (1958).

134. 360 P.2d 933 (1961).

135. 147 F. Supp. 640 (1956); aff'd 354 U.S. 916 (1957).

136. Okla. Stat., Tit. 52, §54 (1941).

137. *Supra*, note 134.

138. J. Campbell, "Proration or Ratable Take Provisions as a Solution to the Marketing Problems of the Independent Producer of Oil and Gas", 7 *Rocky Mt. Mineral Law Inst.* (1962) at 176.

139. Interview with Ralph L. Wampler, Conservation Attorney, and Dan R. Dunnett, Director of Conservation, Okla. Corp. Comm'n., in Oklahoma City, on May 16, 1967.

140. *Louisiana Oil and Gas Facts*, Mid-Continent Oil and Gas Assn., 8th Ed. (1966) at 1.

141. *Id.*

142. *Id.*

143. *Conservation of Oil and Gas, A Legal History*, ABA Section on Mineral & Natural Resources Law (1960), at 100.

144. *Louisiana Oil and Gas Facts*, *supra*, note 140.

145. Annual Oil and Gas Report, 1965, La. Dept. of Conservation, at 12.

146. *Id.*, at 14.

147. *La. Rev. Stat.*, 30:2 *et seq.* (1950).

148. *Conservation of Oil and Gas, A Legal History*, *supra*, note 143.

149. L. Moses, "Louisiana's Oil and Gas Conservation Law", 24 *Tulane L. Rev.* (1950) at 311.

150. *Id.*

151. *La. Rev. Stat.*, 30:2 (1950).

152. *La. Rev. Stat.*, 30:3 (1)(a), (b) (1950).

153. *La. Rev. Stat.*, 30:9 (D) (1950).

154. Hunter v. McHugh, 320 U.S. 222 (1943).

155. 1 So. 2d 518 (1941).

156. La. Dept. of Conservation Statewide Order No. 29-F (Nov. 8, 1955); (text is set forth in the Appendix).

157. J. Hussey, "Ratable Take", XV *Oil and Gas Compact Bull.*, No. 2 (Dec. 1956) at 33.

158. Statewide Order No. 29-F, *supra*, note 156, §4.

159. La. Dept. of Conservation Amendment to Statewide Order No. 29-F (Mar. 13, 1959); (text is set forth in the Appendix).

160. La. Dept. of Conservation Memorandum Instructions Regarding Statewide Order No. 29-F, §2 (2), (Nov. 10, 1955); (text is set forth in the Appendix).

161. Statewide Order No. 29-F, *supra* note 156, §2.

162. *Id.*, §3.

163. La. Dept. of Conservation Memorandum Instructions, *supra*, note 160, §6.

164. *La. Rev. Stat.*, 30:42 (1950).

165. J. Hussey, supra, note 157.

166. Interview with Carlton V. Hudson and Fred Peterson, La. Dept. of Conservation, at Baton Rouge, La., on July 6, 1967.

167. Supp. and Amendment to Order No. 324-C-2 (May 1, 1964).

168. Interview, *supra*, note 166.

169. A. Moulton, "Oil and Gas Conservation and Regulation in Louisiana," XVIII *Oil and Gas Compact Bull.*, No. 1 (June 1959).

152. *La. Rev. Stat.*, 30:3 (1)(a), (b) (1950).

153. *La. Rev. Stat.*, 30:9 (D) (1950).

154. *Hunter v. McHugh*, 320 U.S. 222 (1943).

155. 1 So. 2d 515 (1941).

156. La. Dept. of Conservation Statewide Order No. 29-F (Nov. 8, 1955); (text is set forth in the Appendix).

157. J. Hussey, "Suitable Take", XV *Oil and Gas Compact Bull.*, No. 2 (Dec. 1956) at 13.

158. Statewide Order No. 29-F, *supra*, note 156, ¶4.

159. La. Dept. of Conservation Amendment to Statewide Order No. 29-F (Mar. 13, 1959); (text is set forth in the Appendix).

160. La. Dept. of Conservation Memorandum Instructions Regarding Statewide Order No. 29-F, ¶2 (5), (Nov. 10, 1955); (text is set forth in the Appendix).

161. Statewide Order No. 29-F, *supra* note 156, ¶2.

162. *Id.*, ¶3.

163. La. Dept. of Conservation Memorandum Instructions, *supra*, note 160, ¶6.

164. *La. Rev. Stat.*, 30:42 (1950).

165. J. Hussey, supra, note 157.

166. Interview with Carlton V. Hudson and Fred Peterson, La. Dept. of Conservation, at Baton Rouge, La., on July 6, 1957.

167. Supp. and Amendment to Order No. 314-C-T (May 1, 1956).

168. Interview, *supra*, note 166.

169. A. Moulton, "Oil and Gas Conservation and Regulation in Louisiana," XVIII *Oil and Gas Compact Bull.*, No. 1 (June 1959).

170. Interview, *supra*, note 166.

171. *Id.*

172. *Id.*

173. F. Hall, *supra*, note 17 at 14.

174. *Id.*

175. Kansas Corp. Comm'n. Exhibit 23, Docket No. C-164 (1965).

176. *Id.*

177. *Supra*, note 3.

178. R. Ainsworth, "Ratable Take of Gas - A Pipeliner's View-Point", XV *Oil and Gas Compact Bull.*, No. 2 (Dec. 1956) at 38.

179. *Id.*

180. *Supra*, note 1.

181. C. Meyers, *supra*, note 4 at 689.

182. F. Hall, *supra*, note 17 at 13.

183. Kansas Corp. Comm'n. Docket No. C-164 (Mar. 21, 1944).

184. *Id.*, at 7.

185. *Id.*, at 4.

186. *Id.*, at 13.

187. 386 P.2d 266 (1963).

188. *Supra*, note 9.

189. Colorado Interstate Gas Co. v. State Corp. Comm'n., 379 U.S. 131 (1964).

190. *Supra*, note 9.

170. Interview, supra, note 166.

171. Id.

172. Id.

173. F. Hall, supra, note 17 at 14.

174. Id.

175. Kansas Corp. Comm'n. Exhibit 11, Docket No. C-164 (1944).

176. Id.

177. Supra, note 1.

178. W. Ainsworth, "Rumble Talks of Gas - A Pipeliner's View-Point", XV Oil and Gas Compact Bull., No. 7 (Dec. 1956) at 38.

179. Id.

180. Supra, note 1.

181. C. Meyers, supra, note 4 at 589.

182. F. Hall, supra, note 17 at 13.

183. Kansas Corp. Comm'n. Docket No. C-164 (Mar. 21, 1944).

184. Id., at 7.

185. Id., at 4.

186. Id., at 15.

187. 301 P.2d 196 (1956).

188. Supra, note 9.

189. Colorado Interstate Gas Co. v. State Corp. Comm'n, 379 U.S. 131 (1964).

190. Supra, note 9.

191. Kansas Corp. Comm'n. Docket No. C-164, _supra_, note 183.

192. _Id._

193. _Id._ at 14a.

194. _Id._

195. General Rules and Regulations of Kansas Corp. Comm'n., Rule No. 82-2-202 (1966) at 42-43.

196. _Kansas Stat. Ann._, 55-703 (1966).

197. Kansas Corp. Comm'n. Exhibit 23, _supra_, note 175 at 6.

198. Interview with Gordon D. Ryan, Asst. General Counsel, Kansas Corp. Comm'n., in Greensburg, Kansas, on May 19, 1967.

199. Interview with John P. Roberts, Administrator, Conservation Div., Kansas Corp. Comm'n., in Greensburg, Kansas, on May 19, 1967.

200. _Id._

201. XXV _Oil and Gas Compact Bull._, No. 1 (June 1966) at 113.

202. J. Kennedy, "Underground Gas-Storage Activity Slows in U.S. and Canada", 65 _Oil and Gas J._, No. 19 (May 18, 1967).

203. _Natural Gas: A Study in Industry Pioneering_, American Gas Assn. (1963) at 11.

204. _Id._

205. E. Tiratsoo, _Natural Gas,_ Scientific Press Ltd., London (1967) at 188.

206. 65 _Oil and Gas J._, No. 16 (April 10, 1967) at 54.

207. _Id._

208. _Supra_, note 3.

209. C. Dickenson, "Ratable Taking of Natural Gas", 11 _Sw. L. J._ (1957) at 359.

210. Texas R.R. Comm'n. Special Order No. 3-53, *supra,* note 85.

211. R. R. Comm. v. Rio Grande Valley Gas Co., *supra*, note 71.

212. Supp. and Amendment to Order No. 324-C-2, *supra*, note 167.

213. *Supra*, note 9.

214. *Supra*, note 189.

215. R. R. Comm. v. Rio Grande Valley Gas Co., *supra*, note 71.

216. Atlantic Refining Co. v. Public Service Comm'n., 360 U.S. 378 (1959).

APPENDIX

STATE OF LOUISIANA
DEPARTMENT OF CONSERVATION
BATON ROUGE, LOUISIANA

November 8, 1955

STATEWIDE ORDER NO. 29-F

Concerning the establishment of allowable production of natural gas from wells in Louisiana Classified by the Department of Conservation as gas wells producing from non-associated gas pools; prescribing the manner in which allowable gas may be produced and providing a uniform manner for balancing overproduction and underproduction.

* * * * * * * * * * * *

Pursuant to public hearing held on this matter on October 10, 1955, in New Orleans, Louisiana, after proper legal advertisement and notice by mail to all known interested parties, the following Order is issued and promulgated by the Commissioner of Conservation:

IT IS ORDERED:

The volume of natural gas permitted to be produced from all wells in Louisiana classified by the Department of Conservation as gas wells producing from non-associated gas pools (hereinafter referred to as "allowable"), shall be established in the manner hereinafter set forth and gas shall be produced from such wells in the manner herein prescribed:

SECTION 1. - Application :

This Order shall apply to all wells in Louisiana producing gas from non-associated gas pools, whether covered by Special Order or not, and any provisions of prior orders, including Special Field Orders, in conflict herewith are hereby modified to the extent of such conflict only.

This Order shall not apply to casinghead gas produced from wells classified by the Department of Conservation as oil wells, nor to pools in which gas cycling or pressure maintenance projects have been covered by Special Orders.

Where a gas pool reaches a stage of depletion which would render the enforcement of this order impracticable or unduly burdensome either on the Department of Conservation or upon the producers, gathers or purchasers of gas from such pool, the Commissioner of Conservation may exempt such pool from the provisions of this order by notice to the producers and purchasers of gas from the pool who filed producers producers or transporters reports with the Department of Conservation for the month immediately prior thereto.

SECTION 2.- Nominations

On or before December 5, 1955, and on or before the fifth (5th) day of March, June, September and December of each year thereafter, each gas purchasing company, user, transporter, gathering system operator or other party receiving gas at the well or at a central delivery point shall file gas nominations in the form of affidavits, stating the volume of gas which will be purchased or withdrawn from each pool within a field during the next succeeding calendar quarter of the year. These nominations shall be filed, in duplicate, by the Conservation District, with one copy to the Commissioner and one copy to the appropriate District Office. These nominations must conform to the actual volumes of gas which the nominator anticipates will be required to fulfill its requirements from the field during the succeeding calendar quarter of the year and shall be expressed on a daily average for the period. At the same time the nominator shall report to the Commissioner the actual volume of gas purchased, used, or transported by it during the corresponding quarter of the previous calendar year and shall also be expressed on a daily average for the period.

SECTION 3. - Allowables :

The Commissioner may supplement such nominations and reports with gas market information otherwise available to him, and will then determine the reasonable market demand for gas to be produced during such next ensuing quarterly period from each pool. The total indicated requirements for a pool shall then be allocated among the wells within the pool in accordance with the formula adopted for such pool, by Special Order applicable to such pool, or, if no formula has been adopted for a pool by a Special Order, shall be apportioned among the producing wells in the pool in proportion to the productive area assigned to each well.

This Order shall not apply to casinghead gas produced from wells classified by the Department of Conservation as oil wells, nor to pools in which gas cycling or pressure maintenance projects have been covered by Special Orders.

Where a gas pool reaches a stage of depletion which would render the enforcement of this order impracticable or unduly burdensome either on the Department of Conservation or upon the producers, gatherers or purchasers of gas from such pool, the Commissioner of Conservation may exempt such pool from the provisions of this order by notice to the producers and purchasers of gas from the pool who filed producers producers or transporters reports with the Department of Conservation for the month immediately prior thereto.

SECTION 2.- Nominations

On or before December 5, 1955, and on or before the fifth (5th) day of March, June, September and December of each year thereafter, each gas purchasing company, user, transporter, gathering system operator or other party receiving gas at the well or at a central delivery point shall file gas nominations in the form of affidavits, stating the volume of gas which will be purchased or withdrawn from each pool within a field during the next succeeding calendar quarter of the year. These nominations shall be filed, in duplicate, by the Conservation District, with one copy to the Commissioner and one copy to the appropriate District Office. These nominations must conform to the actual volumes of gas which the nominator anticipates will be required to fulfill its requirements from the field during the succeeding calendar quarter of the year and shall be expressed on a daily average for the period. At the same time the nominator shall report to the Commissioner the actual volume of gas purchased, used, or transported by it during the corresponding quarter of the previous calendar year and shall also be expressed on a daily average for the period.

SECTION 3. - Allocation

The Commissioner may supplement such nominations and reports with gas market information otherwise available to him, and will then determine the reasonable market demand for gas to be produced during such next ensuing quarterly period from each pool. The total indicated requirements for a pool shall then be allocated among the wells within the pool in accordance with the formula adopted for such pool, by Special Order applicable to such pool, or, if no formula has been adopted for a pool by a Special Order, shall be apportioned among the producing wells in the pool in proportion to the productive area assigned to each well.

If any well or wells shall be incapable of producing the full allowable so determined, an allowable shall be fixed for each such well upon the basis of its ability to produce, and the aggregate allowables of such wells so fixed shall be subtracted from the reservoir allowable, and the remainder of the allowable for the pool shall be allocated to the remaining wells upon the basis of the formula in effect.

The scheduled allowables for each well as issued by the Commissioner of Conservation for each quarterly period shall be expressed as an average daily allowable for the period. For the purpose of reporting monthly production to the Commissioner, the daily allowable for each well times the number of days in the calendar month shall be reported as the monthly allowable.

No gas well shall be entitled to an allowable, nor shall an allowable be granted, until all necessary physical connections are made to permit full utilization of the allowable to be granted nor until a plat has been filed, in triplicate, with the Commissioner of Conservation showing the productive acreage attributable to said well, the location of all wells on the lease and immediately surrounding the lease producing from the reservoir and the ownership of said lease. Should the Commissioner consider that any acreage assigned by an Operator to a well for the computation of allowable production not be productive, the Commissioner may exclude such acreage which he considers non-productive in computing the allowable production for the well, or may require the Operator to file new plat of acreage assignable to the well all of which the Commissioner considers to be productive.

Allowables for newly completed gas wells shall commence on the date of completion provided the well is physically connected to a market and provided a plat is on file. No productive acreage attributed to a well shall be attributed to any other drilling or producing well in the same pool. The allowable for a new well completed in a pool during any allowable period shall be established by the same formula as was used in fixing the allowable for wells already producing from that pool at the beginning of the allowable period.

The Commissioner shall have the right, when emergencies arise, to issue such emergency allowables as become necessary in order to satisfy, for the period of the emergency, an increased demand for that gas.

SECTION 4. - Balancing of Production to Allowable :

Except as hereinafter prohibited, any gas well may produce during a calendar month one and one-half (1-1/2) times the allowable assigned to it, provided that its production shall be brought into balance at the times and in the manner herein prescribed. When the monthly production from a well exceeds its monthly allowable, the excess shall be termed "overproduction", and when a well's monthly production is less than its monthly allowable the deficiency shall be termed "underproduction".

Each producer shall keep a monthly account of the cumulative production status of each gas well as to overproduction and underproduction and shall report such cumulative production status on the R5P reports filed monthly with the Department of Conservation.

For the purpose of this Order, on July 1, 1955, all gas wells shall be considered in balance and not credited with any underproduction or charged with any overproduction, but thereafter when any gas well shall have a cumulative overproduction status the last six (6) months of any year, the operator or owner of such well shall reduce the production of gas from the well during the first six (6) months of the following year below the regular allowables so as to bring its production in balance with its allowable by the 1st day of July of that year. Such reduced production may be at varying rates of withdrawal, normally experienced in gas production and marketing, so long as the overproduction is eliminated by the 1st day of July. Any well having a cumulated overproduction status on the 1st day of July of any year shall be closed in and not produced until such overproduction is entirely eliminated.

When any gas well shall have a cumulative underproduction status at the end of the last six (6) months of any year, such underproduction may be made up during the first six (6) months of the following year, but any underproduction remaining on the 1st day of July of any year shall be cancelled and shall not thereafter be made up.

SECTION 5. - Capability of Wells to Produce :

Anything herein contained to the contrary notwithstanding, no well shall be produced in excess of its maximum efficient rate of production nor at a monthly rate in excess of one and one-half (1-1/2) times its monthly allowable, even during make-up periods.

SECTION 4. - Balancing of Production to Allowable

Except as hereinafter prohibited, any gas well may produce during a calendar month one and one-half (1-1/2) times the allowable assigned to it, provided that its production shall be brought into balance at the times and in the manner herein prescribed. When the monthly production from a well exceeds its monthly allowable, the excess shall be termed "overproduction", and when a well's monthly production is less than its monthly allowable the deficiency shall be termed "underproduction".

Each producer shall keep a monthly account of the cumulative production status of each gas well as to overproduction and underproduction and shall report such cumulative production status on the [illegible] reports filed monthly with the Department of Conservation.

For the purpose of this Order, on July 1, [illegible], all gas wells shall be considered in balance and not credited with any underproduction or charged with any overproduction, but thereafter when any gas well shall have a cumulative overproduction status the last six (6) months of any year, the operator or owner of such well shall reduce the production of gas from the well during the first six (6) months of the following year below the regular allowables so as to bring its production in balance with its allowable by the 1st day of July of that year. Such reduced production may be at varying rates of withdrawal, normally experienced in gas production and marketing, so long as the overproduction is eliminated by the 1st day of July. Any well having a cumulative overproduction status on the 1st day of July of any year shall be closed in and not produced until such overproduction is entirely eliminated.

When any gas well shall have a cumulative underproduction status at the end of the last six (6) months of any year, such underproduction may be made up during the first six (6) months of the following year, but any underproduction remaining on the 1st day of July of any year shall be cancelled and shall not thereafter be made up.

SECTION 5. - Capability of Wells to Produce:

Anything herein contained to the contrary notwithstanding, no well shall be produced in excess of its maximum efficient rate of production nor at a monthly rate in excess of one and one-half (1-1/2) times its monthly allowable, even during make-up periods.

Unless waived by the Commissioner, each producer shall conduct semi-annual deliverability tests of each producing gas well by methods approved by the Commissioner, the results of such tests to be reported on Form DT-1 entitled "Gas Well Deliverability Test". Conservation District Managers may schedule test periods for each field in his district and notify all producers at least ten (10) days in advance of such field tests, and in that instance, such deliverability tests shall be made in accordance with the schedule. Where no such schedule is made in a Conservation District, each producer may schedule such tests at his own convenience, but shall give the Manager of the Conservation District in which the well is to be tested notice at least ten (10) days in advance of the proposed test, in order that the District Manager may have the test witnessed by a representative of the Conservation Department if he so desires.

When any well becomes incapable of producing its current allowable, or when the allowable assigned to a well exceeds an efficient producing rate or might result in injury to the well or reservoir, such matters shall be reported to the Manager of the Conservation District in which the well is located within five (5) days after they become known to the producer, and the allowable for that well shall be reduced to its productive capacity or efficient rate, whichever is lower.

When any well shall cease to produce or be incapable of delivering gas into the line, the producer shall report that fact to the Manager of the Conservation District where the well is located.

SECTION 6. - Ratable Take:

During the last six (6) months of each year, the Commissioner shall make a survey of the production of gas from fields having more than one market. Should the Commissioner find that during the preceding six (6) month period, gas has not been taken ratably from the wells in any reservoir in accordance with the allowables established by him, he shall call a conference of all producers, purchasers and gatherers who are currently filing with the Department of Conservation reports of production, purchase or transportation of gas from the reservoir, and determine the reason why gas has not been taken in accordance with the allowables established by him and shall make such adjustments in allowables or take such further action as he may deem appropriate to accomplish a ratable taking of gas from the various wells in the reservoir.

DEPARTMENT OF CONSERVATION
OF THE STATE OF LOUISIANA

BY: (signed) John B. Hussey
JOHN B. HUSSEY
COMMISSIONER OF CONSERVATION

STATE OF LOUISIANA
DEPARTMENT OF CONSERVATION
BATON ROUGE, LOUISIANA

November 10, 1955

MEMORANDUM

INSTRUCTIONS REGARDING STATEWIDE ORDER NO. 19-F

SECTION 1. - Application

Order No. 19-F is explicit as to application.

SECTION 2. - Nominations

1. Each gas purchasing company, user, transporter, gathering system operator, or other party receiving gas at the well or at a central delivery point shall file gas nominations in the form of affidavits as required by Statewide Order No. 19-F, which Order is attached, in the manner as shown on the attached sample nomination form.

2. Public hearings will be held each quarter for the purpose of receiving nominations from the purchasers of natural gas in the State of Louisiana. The first such hearing will be held on December 9, 1955. Thereafter, the hearings will be held in March, June, September and December of each year. A notice of time and place of these hearings will be furnished to all parties required to nominate for natural gas.

3. If a pipe line purchaser is receiving gas at a central delivery point from a gathering system operator and is unable to secure from the gathering system operator the amount of gas that would be produced into that system from each individual pool producing into the system to satisfy the market demand at the central delivery point then in that event the pipe line purchaser may nominate the total gas required at the central delivery point and from whom the gas will be received, provided the gathering system operator nominates for the gas required by each pool from which he is receiving gas.

STATE OF LOUISIANA
DEPARTMENT OF CONSERVATION
BATON ROUGE, LOUISIANA

November 10, 1953

MEMORANDUM

INSTRUCTIONS REGARDING STATEWIDE ORDER NO. 19-F

SECTION 1. - Application

Order No. 19-F is explicit as to application.

SECTION 2. - Nominations

1. Each gas purchasing company, user, transporter, gathering system operator, or other party receiving gas at the well or at a central delivery point shall file gas nominations in the form of affidavits as required by Statewide Order No. 19-F, which Order is attached, in the manner as shown on the attached sample nomination form.

2. Public hearings will be held each quarter for the purpose of receiving nominations from the purchasers of natural gas in the State of Louisiana. The first such hearing will be held on December 9, 1953. Thereafter, the hearings will be held in March, June, September and December of each year. A notice of time and place of these hearings will be furnished to all parties required to nominate for natural gas.

3. In case the purchaser is receiving gas at a central delivery point from a gathering system operator and is unable to secure from the gathering system operator the amount of gas that would be produced into that system from each individual pool producing into the system to satisfy the market demand at the central delivery point then in that event the pipe line purchaser may nominate the total gas required at the central delivery point and from whom the gas will be received, provided the gathering system operator nominates for the gas required by each pool from which he is receiving gas.

SECTION 3. - Allowable

Each operator of a gas well producing to a market in the State of Louisiana which well has not already been assigned a producing unit by a Special Order of the Commissioner of Conservation shall file in triplicate a plat showing the productive acreage attributable to said well, the location of all wells on the lease and immediately surrounding the lease producing from the reservoir and the ownership of said lease. These plats shall be filed as soon as it is practicable but not later than February 1, 1956 and when approved by the Commissioner of Conservation shall be used for the basis of allocating the allowable for the wells producing from the pool. No productive acreage attributed to a well shall be attributed to any other drilling or producing well in the same pool.

SECTION 4. - Balancing of Production to Allowable

Commencing with production as of November 1, 1955 each producer of natural gas in the State of Louisiana shall file the cumulative production status of each gas well as to overproduction and underproduction on Form R5P; said cumulative status to commence with July 1, 1955 as specified in Order No. 29-F. The Form R5P as it now exists does not carry a column for this information and since we have a large supply of this form on hand it is requested that each producer utilize the column entitled "Parish" on this form to show the cumulative production status of these gas wells. When the present forms are exhausted new forms containing a column for cumulative production status will be provided.

SECTION 5. - Capability of Wells to Produce

This Section requires that each producer shall conduct semi-annually deliverability tests of each producing gas well by methods approved by the Commissioner and that the results of such tests are to be reported on Form DT-1 entitled "Gas Deliverability Test". A mimeographed copy of this form is being attached and on the reverse side thereof are contained the instructions for the filing of this form.

So that the District Managers will be apprised of the ability to produce of each of the gas wells in his District at the time that he is establishing the gas well allowables for the first quarter of 1956, each operator shall prepare Form DT-1 on all wells operated by him showing a recent test performed by him on each well such form to be filed on or before December 5, 1955. This form shall be filed thereafter in the manner prescribed in

the instructions contained on the reverse side of the attached Form DT-1.

SECTION 6. - Ratable Take

It is the purpose of this order to require that gas be taken ratably from wells completed in and producing from a common pool. Should any operator of any other interested party feel that gas is not being taken ratably from his well or wells then he may make that fact known to the Commissioner of Conservation and following conferences with those involved the Commissioner may make such adjustment in allowable and take such further action as he may determine appropriate to accomplish a ratable taking of gas from the various wells in the pool.

DEPARTMENT OF CONSERVATION
OF THE STATE OF LOUISIANA

By: (Signed) John B. Hussey
COMMISSIONER OF CONSERVATION

the instructions contained on the reverse side of the attached Form DT-1.

SECTION 4. - Ratable Take

It is the purpose of this order to require that gas be taken ratably from wells completed in and producing from a common pool. Should any operator or any other interested party feel that gas is not being taken ratably from his well or wells then he may make that fact known to the Commissioner of Conservation and following conferences with those involved the Commissioner may make such adjustment in allowable and take such further action as he may determine appropriate to accomplish a ratable taking of gas from the various wells in the pool.

DEPARTMENT OF CONSERVATION
OF THE STATE OF LOUISIANA

By: (Signed) John B. Hussey
COMMISSIONER OF CONSERVATION

STATE OF LOUISIANA
DEPARTMENT OF CONSERVATION
BATON ROUGE, LOUISIANA

December 18, 1955

MEMORANDUM

ADDITIONAL INSTRUCTIONS REGARDING STATEWIDE ORDER NO. 29-F

Statewide Order No. 29-F and also the Memorandum Instructions attached thereto requires in Section 3 thereof that "The total indicated requirements for a pool shall then be allocated among the wells within the pool in accordance with the formula adopted for such pool, by Special Order applicable to such pool, or if no formula has been adopted for a pool by a Special Order, shall be apportioned among the producing wells in the pool in proportion to the productive area assigned to each well, "and requires further that "Each operator of a gas well producing to a market in the State of Louisiana which well has not already been assigned a producing unit by a Special Order of the Commissioner of Conservation shall file in triplicate a plat showing the productive acreage attributable to said well, the location of all wells on the lease and immediately surrounding the lease producing from the reservoir and the ownership of said lease. These plats shall be filed as soon as it is practicable but not later than February 1, 1956 and when approved by the Commissioner of Conservation shall be used for the basis of allocating the allowable for the wells producing from the pool. No productive acreage attributed to a well shall be attributed to any other drilling or producing well in the same pool."

It will be the responsibility of the Louisiana Geological Survey to review the plats required to be filed by Statewide Order No. 29-F and it is therefore felt that the plats should contain the geological evidence necessary to show proof that all of the acreage contained within the units is productive. These plats should therefore either show the geology to justify the productivity of the acreage or in the event the operator chooses that his geological interpretation be held confidential, he may so indicate this in his letter of transmittal and file three (3) plats showing the outer boundaries of the units which are proposed and file in addition a fourth plat to show the geological justification for the productivity of the units

recommended by him. He should make a request that the geological maps be considered confidential and so mark the maps. In the event the latter approach is taken by the operator then the geological maps marked confidential will be maintained in the confidential file of the Louisiana Geological Survey.

Each operator of gas wells in the State of Louisiana who is supplying gas to a market shall comply with the provisions of the paragraph above.

DEPARTMENT OF CONSERVATION
OF THE STATE OF LOUISIANA

By: (Signed) John B. Hussey
JOHN B. HUSSEY
COMMISSIONER OF CONSERVATION

STATE OF LOUISIANA
DEPARTMENT OF CONSERVATION
BATON ROUGE, LOUISIANA

May 15, 1959

AMENDMENT TO STATEWIDE ORDER NO. 29-F

Pursuant to power delegated under the laws of the State of Louisiana, and particularly Title 30 of Louisiana Revised Statutes of 1950, and based upon a public hearing held in New Orleans, Louisiana, on October 10, 1955, after proper legal advertisement and notice by mail to all known interested parties, and based further on subsequent studies and practical experience in the administration of Statewide Order 29-F, the following amendatory order is issued and promulgated by the Commissioner of Conservation.

FINDINGS

The Commissioner of Conservation finds as follows:

1. That Statewide Order No. 29-F, dated November 8, 1955, established the volume of natural gas permitted to be produced from gas wells producing from non-associated gas pools, prescribed the manner in which the allowable may be produced and provided a uniform manner for balancing overproduction and underproduction.

2. That the Commissioner of Conservation retained jurisdiction over the matters covered by the above mentioned order for the purpose of determining if, in actual practice, the interests of conservation and the requirements of the industry and the purchasers of gas would be satisfied thereby.

3. That Department of Conservation Order No. 29-F authorizes overproduction of a gas well at the monthly rate of one and one-half times the monthly allowable granted to it and prescribes the manner in which this overproduction shall be brought into balance. It has now been determined that the requirements of the gas purchasing companies vary greatly from month to month and that to satisfy these requirements, it is necessary either that the nominations be more liberally estimated or that the amount of authorized monthly overproduction be increased.

STATE OF LOUISIANA
DEPARTMENT OF CONSERVATION
BATON ROUGE, LOUISIANA

May 14, 1959

AMENDMENT TO STATE-WIDE ORDER NO. 29-F

Pursuant to power delegated under the laws of the State of Louisiana, and particularly Title 30 of Louisiana Revised Statutes of 1950, and based upon a public hearing held in New Orleans, Louisiana, on October 10, 1958, after proper legal advertisement and notice by mail to all known interested parties, and based further on subsequent studies and practical experience in the administration of Statewide Order 29-F, the following amendatory order is issued and promulgated by the Commissioner of Conservation.

FINDINGS

The Commissioner of Conservation finds as follows:

1. That Statewide Order No. 29-F, dated November 8, 1955, established the volume of natural gas permitted to be produced from gas wells producing from non-associated gas pools, prescribed the manner in which the allowable may be produced and provided a uniform manner for balancing over-production and under-production.

2. That the Commissioner of Conservation retained jurisdiction over the matters covered by the above mentioned order for the purpose of determining if, in actual practice, the interests of conservation and the requirements of the industry and the purchasers of gas would be satisfied thereby.

3. That Department of Conservation Order No. 29-F authorizes over-production of a gas well at the monthly rate of one and one-half times the monthly allowable granted to it and prescribes the manner in which this over-production shall be brought into balance. It has now been determined that the requirements of the gas purchasing companies vary greatly from month to month and that to satisfy these requirements, it is necessary either that the nominations be more liberally estimated or that the amount of authorized monthly over-production be increased.

4. That the reasonable market demand for the gas produced in the State of Louisiana can be better determined if the nominations remain realistic and, therefore, authorized overproduction should be increased by allowing a gas well to produce during a calendar month two (2) times the monthly allowable assigned to it.

ORDER

NOW, THEREFORE, IT IS ORDERED THAT:

The First paragraph of Section 4 of Department of Conservation Order 29-F is hereby amended and revised to provide as follows:

> "Except as hereinafter prohibited, any gas well may produce during a calendar month twice the allowable assigned to it, provided that its production shall be brought into balance at the times and in the manner herein prescribed. When the monthly production from a well exceeds its monthly allowable, the excess shall be termed 'overproduction', and when a well's monthly production is less than its monthly allowable the deficiency shall be termed 'underproduction' ".

and the first paragraph of Section 5 of said Order 29-F is hereby amended and revised to provide as follows:

> "Anything herein contained to the contrary notwithstanding, no well shall be produced in excess of its maximum efficient rate of production nor at a monthly rate in excess of twice its monthly allowable, even during make-up periods."

The other provisions of Department of Conservation Order No. 29-F, and particularly the provisions relating to the balancing of overproduction and underproduction, are not affected by this amendment and shall remain in full force and effect.

This order shall be effective from and after July 1, 1959.

DEPARTMENT OF CONSERVATION
OF THE STATE OF LOUISIANA

By: (Signed) Ashton J. Mouton
ASHTON J. MOUTON
COMMISSIONER OF CONSERVATION

(4/11/61)